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OBSTETRICAL TRANSACTIONS.

VOL. X.

TRANSACTIONS

OF THE

OBSTETRICAL SOCIETY

OF

LONDON.

VOL. X.

FOR THE YEAR 1868.

WITH A LIST OF OFFICERS, FELLOWS, ETC.

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1869.

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Clark, James Fenn, Esq.	Leamington.
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Copeman, Edward, M.D.	Norwich.
Symonds, Frederick, Esq., F.R.C.S.	Oxford.
Kealy, John R., M.D.	Portsmouth.
Harrinson, Isaac, Esq., F.R.C.S.	Reading.
Fowler, James, Esq.	Wakefield.
Corry, Thomas C. S., M.D.	Belfast.
Shortt, John, M.D.	Madras, Southern India.
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Geo. Thompson Gream, M.D., Upper Brook street.

HONORARY FELLOWS.

BRITISH SUBJECTS.

Elected

1865 Bailey, Henry Woodruffe, F.R.C.S., Thetford, Norfolk.

1863 Beatty, Thomas Edward, M.D., M.R.I.A., &c., late Professor of Midwifery at the Royal College of Surgeons of Ireland, President of the King's and Queen's College of Physicians of Ireland; 78, Merrion square north, Dublin.

1862 Churchill, Fleetwood, M.D., Professor of Midwifery, King's and Queen's College of Physicians, Ireland; 15, Stephen's green north, Dublin.

1862 McClintock, Alfred H., M.D., late Master of the Lying-in Hospital; 21, Merrion square north, Dublin.

1862 Duncan, James Matthews, M.D., A.M., Lecturer on Midwifery and Diseases of Women and Children, Surgeon's Hall; 30, Charlotte square, Edinburgh.

1862 Hall, Archibald, M.D., Professor of Midwifery, University of McGill College, Montreal, Canada.

1862 Simpson, Sir James Y., Bart., M.D., D.C.L., Professor of Midwifery, University of Edinburgh, Physician-Accoucheur to the Queen in Scotland; 52, Queen street, Edinburgh.

FOREIGN SUBJECTS.

Elected

1863 Braun, Carl, M.D., Professor of Midwifery, Vienna.
1862 Channing, Walter, M.D., late Professor of Midwifery in the University of Cambridge, Boston, U.S.
1863 Depaul, Jean Anne Henri, M.D., Paris.
1862 Dubois, Baron Paul, late Professor of Clinical Midwifery in the Faculty of Medicine, Paris.
1863 Faye, F. C., Professor of Midwifery in the University of Christiania.
1864 Hecker, C., Munich.
1866 Hugenberger, Theodor, M.D., St. Petersburgh.
1866 Lazarewitch, J., Kharkoff, Russia.
1866 Lazzati, Pietro, Milan.
1863 Martin, Eduard, M.D., Director of the Institute for Clinical Midwifery at the University, Berlin.
1862 Meigs, Charles D., M.D., late Professor of Obstetrics, &c., in the Jefferson Medical College, Philadelphia, U.S.
1864 Pajot, Ch., M.D., Professor of Midwifery to the Faculty of Medicine, Paris.
1866 Rizzoli, Francesco, Bologna.
1862 Scanzoni, F. W. von, M.D., Professor of Midwifery, Würzburg.
1864 Sims, J. Marion, M.D., late Surgeon to the Women's Hospital, New York.
1866 Thomas, Abraham Everard Simon, Leyden.
1862 Virchow, Rudolf, M.D., Professor of Pathological Anatomy in the University of Berlin.

ORDINARY FELLOWS.

MARCH, 1869.

Those marked thus (*) have paid the Composition Fee in lieu of further annual subscriptions.

Elected

1869 ADAMS, THOMAS RUTHERFORD, M.D., Surgeon to the Croydon General Hospital; 1, Ottoman villas, St. James's road, West Croydon.

1868 ADAMS, WILLIAM, F.R.C.S., 37, Harrington square, N.W.

1864 AITKEN, WILLIAM, M.D., Madras Medical Service.

1859 ALDERSEY, WILLIAM HUGH, M.B. Lond., F.R.C.S., South Hayling Island, Havant, Hants.

1861 ALDRIDGE, JOHN PETTY, M.D., Shirley House, Dorchester.

1859 ALLEN, GEORGE, M.D., 11, Soho square.

1859 AMSDEN, GEORGE JOHN, M.D., 85, St. Paul's road, Highbury, N.

1866 ANDREWS, HENRY CHARLES, M.D., 1, Oakley square, N.W.

1859 ANDREWS, JAMES, M.D., 149, Camden road, N.W.

1859 ARCHER, JOHN, F.R.C.S., 9, Carpenter road, Edgbaston, Birmingham.

1861 ARMSTRONG, JOHN, M.D., Gravesend, Kent.

1859 ASPINALL, THOMAS, Green street, Over Darwen, Lancashire.

1859 AVELING, JAMES H., M.D., Consulting Surgeon to the Sheffield Hospital for Women; Boley Hill, Rochester, Kent. *Council*, 1865-66.

1859 AYLING, WILLIAM HENRY, L.R.C.P. Ed., 103, Great Portland street, W.

1864 BAKER, G. BENSON, 94, Lisson Grove, N.W.

1867 BAKER, JOHN C., M.D., F.R.C.S. Ed.; 132, Duke street, Liverpool.

Elected

1859 Baker, John Wright, Surgeon to the Derbyshire General Infirmary; 102, Friar gate, Derby.

1859 Ballard, Thomas, M.D., 10, Southwick place, Hyde Park, W.

1859 Bannister, John Henry, 436, Oxford street, W.

1863 Barker, Edward, F.R.C.S., Senior Surgeon to the Melbourne Hospital, Victoria.

1859 Barnes, Robert, M.D., F.R.C.P., Obstetric Physician to, and Lecturer on Midwifery at, St. Thomas's Hospital; Physician to the Royal Maternity Charity; 46, Finsbury square, E.C. *Vice-Pres.* 1859-60. *Council*, 1861-62, 1867-69. *Treas.* 1863-64. *Pres.* 1865-66.

1859 Barnett, Thos. W., 72, Fore street, Limehouse, E.

1863 Barratt, Joseph G., M.D., 8, Cleveland gardens, Bayswater, W.

1861* Bartrum, John S., F.R.C.S., Surgeon to the Bath General Hospital; 41, Gay street, Bath.

1867 Basan, Horace, L.R.C.P. Ed., 77, Welbeck street, W.

1866 Bassett, John, Professor of Midwifery at the Queen's College, Birmingham; 144, Hockley hill, Birmingham.

1859 Bateman, Henry, F.R.C.S., 32, Compton terrace, Canonbury, Islington, N.

1867 Batten, Rayner W., M.D., Physician to the Gloucester General Infirmary; 1, Brunswick square, Gloucester.

1859 Battye, Richard F., M.R.C.P. Ed., 6, Gloucester street, Belgrave road, Pimlico, S.W.

1859 Beck, T. Snow, M.D., F.R.S., 71, Portland place, W.

1868 Beigel, Hermann, M.D., Physician to the Metropolitan Free Hospital; 3, Finsbury square.

1866 Belcher, Henry, M.D., L.R.C.P. Ed.; 10, Pavilion Parade, Brighton.

1867 Bennet, William Ford, 179, Clarendon road, Notting hill, W.

1859 Berry, Samuel, F.R.C.S., Consulting Surgeon-Accoucheur to the Queen's Hospital, and Professor of Midwifery and the Diseases of Women and Children in the Queen's College; Hatfield House, 281, Hagley road, Edgbaston, Birmingham. *Vice-Pres.* 1859. *Hon. Loc. Sec.*

Elected

1859 Billinghurst, Henry, M.D., 5, Church row, Islington, N.

1859 Bird, Frederic, M.D., Obstetric Physician to, and Lecturer on Midwifery and Diseases of Women at, the Westminster Hospital, Senior Physician to the Westminster Maternity Charity; 13, Grosvenor street, W. *Council*, 1859.

1868 Black, James Watt, M.D., 15, Clarges street, Piccadilly, W.

1859 Blackstone, Joseph, Park House, Gloucester road, Regent's park, N.W.

1866 Blagden, Robert, Minchinhampton, near Stroud, Gloucestershire.

1868 Blair, John, Collins street east, Melbourne, Victoria.

1861* Blake, Thomas William, Hurstbourne Tarrant, Andover, Hants.

1859 Blake, Valentine W., F.R.C.S., Surgeon to the Birmingham and Midland Counties Lying-in Hospital; 6, Old square, Birmingham.

1866 Blease, Thomas, Clairville, Altrincham, Cheshire.

1860 Blood, Michael, 15, Portland place, St. Helier's, Jersey.

1859 Bloxam, William, M.D., 21, Mount street, Grosvenor square, W.

1868 Boggs, Alexander, M.D., late of H.M.'s Madras Army; 13, Boulevard de Courcelles, Paris.

1866 Boulton, Percy, M.D., 23, Harewood square, Regent's park, N.W.

1868 Bousfield, Edward, L.R.C.P. Ed., Market place, Thetford, Norfolk.

1859 Brace, William Henry, M.D., 1, Gay street, Bath. *Hon. Loc. Sec.*

1862 Braithwaite, William, M.D., late Lecturer on Midwifery, Leeds School of Medicine; Clarendon House, Clarendon road, Leeds. *Council*, 1869.

1866 Branson, Henry John, M.D., 54, Hall gate, Doncaster.

1862 Brickwell, John, Sawbridgeworth, Herts.

Elected

1865 Bridgman, John Henry, St. James's Lodge, Enfield Highway, Middlesex.

1864 Bright, John Meaburn, M.D., 1, Westbourne villas, Forest hill, Sydenham, S.

1869 Brisbane, James, M.D., 30, Lisson grove, N.W.

1860 Britton, William Samuel, 1, Eaton Villas, 64, Acacia road, St. John's Wood, N.W.

1866 Brodie, George B., M.D., Physician to Queen Charlotte's Lying-in Hospital, 56, Curzon street, Mayfair, W.

1864 Brown, Alfred Gardiner, 63, Trinity square, S.E.

1868 Brown, Andrew, L.R.C.P. Ed., Elton villa, Bartholomew road, Kentish Town, N.W.

1865 Brown, David Dyce, M.A., M.D., 22, Union Place, Aberdeen.

1866 Brown, George Dransfield, Henley Villa, Uxbridge road, Ealing, Middlesex.

1859 Brown, Richard, M.D., 37, Albany villas, Cliftonville, Brighton.

1861 Brown, Samuel William, F.R.C.S., Lewisham, Kent.

1866 Brown, Thomas, M.D., 236, Kennington park road, S.E.

1865 Browne, I. Lennox, 5, Duke street, Portland place, W.

1865 Brunton, John, M.D., M.A., 207, Caledonian road, N.

1866 Bryant, John Henry, 23A, Sussex square, Hyde Park gardens, W.

1863 Bryant, Thomas, F.R.C.S., Assistant-Surgeon to Guy's Hospital; 2, Finsbury square, E.C. *Council*, 1866-67.

1859 Bryant, Walter John, F.R.C.S., L.R.C.P. Ed., 23A, Sussex square, Hyde park gardens, W. *Council*, 1859.

1861 Bunny, Joseph, M.D., Hon. Surgeon to the Newbury Dispensary; Northbrook street, Newbury, Berks.

1859 Burke, Stephen John, Sydney, New South Wales.

1867 Burnett, Charles, M.B., Biggleswade, Bedfordshire.

1866 Burrows, John Cordy, F.R.C.S., Consulting-Surgeon to the Brighton Hospital for Sick Children; 62, Old Steine, Brighton.

Elected

1862 Burton, John Moulden, F.R.C.S., Lee park Lodge, Lee, Kent, S.E. *Council*, 1868-69.

1864 Butler, Frederick John, M.D., Surgeon to Winchester College and St. Cross Hospital, and to the Hants County Hospital, Winchester.

1868 Butler, William Harris, L.R.C.P. Ed., 84, Beresford street, Woolwich.

1868 Butt, William Frederick, 17, South street, Park lane, W.

1859 Buzzard, Thomas, M.D., Assistant-Physician to the National Hospital for the Epileptic and Paralysed; 12, Green street, Grosvenor square, W.

1862 Campbell, Charles, M.D., Kingston, Jamaica. [Agent: Mr. Lewis, Gower street.]

1861 Candlish, Henry, M.D., Bondgate street, Alnwick, Northumberland.

1861 Candy, John, M.D., Assistant-Surgeon, H.M.'s 109th Regiment at Mooltan, India. [*Per* Rev. George Candy, South Newington Vicarage, Banbury, Oxon.]

1866 Carless, John, M.D., 32, Rectory place, Woolwich.

1863 Carlyle, David, M.D., 2, Crescent, Carlisle.

1861 Carter, Albert Pleydell, Wellington House, 43, London road, Gloucester.

1869 Cass, William Cunningham, 20, St. George's road, S.W.

1865 Cassels, Thomas, M.D., 2, Upper Tachbrook street, Pimlico, S.W.

1863 Cayzer, Thomas, Mayfield, Aigburth, Liverpool.

1864 Chambers, Thomas, 2a, Sutherland street, Warwick square, S.W.

1859 Chance, Edward John, F.R.C.S., Surgeon to the Metropolitan Free Hospital and City Orthopædic Hospital; 59, Old Broad street, City, E.C.

1862 Chapman, Walter, F.R.C.S., Lower Tooting, Surrey.

1867 Charles, T. Edmonstoune, M.D., Professor of Midwifery at the Medical College, Calcutta.

1865* Charlton, Egbert, M.D., 5, Albion place, Hyde park square, W.

Elected

1866 Chattaway, Allen G., The Villa, Kingsland, Leominster, Hereford.

1863 Chavasse, Pye Henry, F.R.C.S., 12, The Square, Birmingham.

1868 Child, Edwin, New Malden, Surrey.

1863 Chisholm, Edwin, 46, Margaret street, Wynyard square, Sydney.

1859 Cholmondeley, Joseph, Surgeon-Accoucheur to Queen Charlotte's Lying-in Hospital; 3, Nottingham place, Marylebone road, W. *Council*, 1859-60-61.

1859 Chowne, William Dingle, M.D., F.R.C.P., Consulting-Physician to Charing Cross Hospital; 17, Hyde park place, Cumberland gate, W. *Council*, 1860-62.

1861 Church, William John, F.R.C.S., 22, Circus, Bath.

1859 Claremont, Claude Clarke, Millbrook House, 1, Hampstead road, N.W.

1861 Clark, James, M.D., 3, St. Mark's square, Regent's park, N.W.

1859 Clark, James Fenn, 18, York terrace, Leamington. *Hon. Loc. Sec.*

1867 Clarke, Edward Griffiths, L.R.C.P. Ed., Mold, Flintshire.

1862 Clarke, John, Lynton, North Devon.

1859 Clay, Charles, M.D., late Lecturer on Midwifery and Clinical Medicine in St. Mary's Hospital, Manchester; 101, Piccadilly, Manchester. *Council*, 1863-65.

1859 Clay, John, Professor of Midwifery, Queen's College, Birmingham; 95, Newhall street, Birmingham. *Council*, 1868-69.

1859 Clayton, Oscar, F.R.C.S., Extra Surgeon-in-Ordinary to H.R.H. the Prince of Wales, and Surgeon-in-Ordinary to H.R.H. the Duke of Edinburgh, 5, Harley street, W.

1859 Cleveland, William Frederick, M.D., Stuart villa, 199, Maida vale, W. *Council*, 1863-64.

1861 Clogg, Stephen, East Looe, Cornwall.

1865* Coates, Charles, M.D., Physician to the Bath United General Hospital; 10, Circus, Bath.

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1868 Coates, Frederick T., 201, Euston road, N.W.

1860 Cockell, Edgar, Holly Lodge, Forest road, Dalston, N.E.

1859 Cockell, Frederick Edgar, 1, Alma villas, Dalston, N.E.

1861 Cocker, John, M.D., F.R.C.P. Ed., Bank Hey, Blackpool, near Preston, Lancashire.

1861 Cogan, Joseph, M.D.

1861 Collingwood, William, Ampthill, Beds.

1859 Collins, Chambers, F.R.C.S., Maryport, Cumberland.

1866 Coombs, James, M.D., Bedford.

1866 Cooper, Astley A. C., M.D., Wilton, Salisbury, Wilts.

1868 Cooper, Geoffrey Veel, 100, Hampstead road, N.W.

1864 Cooper, George Henry C, M.D., Surgeon to the Holloway and N. Islington Dispensary; Surgeon-Accoucheur to the Royal Maternity Charity; 35, Compton terrace, Islington, N.

1861 Cooper, John, M.R.C.P. Ed., Clapham rise, S.

1865 Copeman, Edward, M.D., Physician to the Norfolk and Norwich Hospital; Upper King street, Norwich. *Council*, 1869. *Hon. Loc. Sec.*

1867 Corner, Francis M., Surgeon to the Poplar Hospital; Manor House, Poplar, E.

1866 Cornwall, James, F.R.C.S., Fairford, Gloucestershire.

1860 Corry, Thomas Charles Steuart, M.D., L.R.C.P. Ed., Senior Surgeon to the Belfast General Dispensary; 9, Clarendon place, Belfast. *Council*, 1867. *Hon. Loc. Sec.*

1859 Cory, Frederic Charles, M.D., 8, Nassau place, Commercial road east, E. *Council*, 1867-69.

1863 Coward, John W., Christchurch, Canterbury, New Zealand [agents: Messrs. Alfred Hill and Sons, 11, Little Britain].

1859 Croft, J. McGrigor A. T., M.D., M.R.C.P., 8, Abbey road, St. John's Wood, N.W.

1866 Croft, Robert Charles, L.R.C.P. Ed., 204, Camden road, N.W.

Elected

1861 Croskery, Hugh, L.R.C.S., Ireland; Chapelton, Jamaica, [agents: Messrs. Burgoyne, Burbidges and Squire, 16, Coleman street, E.C.]

1860 Cross, Richard, M.D., 5, Queen street, Scarborough, Yorkshire.

1869 Cross, Robert Shackleford, Petersfield, Hants.

1867 Croucher, Henry, West Hill, Dartford, Kent.

1867 Crowther, Edward Lodewyk, L.R.C.P. Ed., late Resident Surgeon, Birmingham Lying-in Hospital; Hobarton, Tasmania.

1859 Culpeper, William Moe, 1, Brunswick Terrace, Palace gardens, Kensington, W.

1862 Cumberbatch, Laurence Trent, M.D., 25, Cadogan place, Belgrave square, S.W. *Council*, 1868-69.

1867 Cuolahan, Hugh, M.D., 9, Grange road, Bermondsey, S.E.

1859 Curgenven, J. Brendon, 11, Craven hill gardens, Bayswater, W.

1868 Daly, Frederic Henry, M.D., 101, Queen's road, Dalston, N.E.

1866 Dane, Thomas, Assistant-Surgeon, Western Ophthalmic Hospital, 24, New Finchley road, N.W.

1859 Davis, John Hall, M.D., F.R.C.P., Obstetric Physician to, and Lecturer on Midwifery and Diseases of Women and Children at, the Middlesex Hospital; Physician to the Royal Maternity Charity; Consulting Physician-Accoucheur to the St. Pancras Infirmary; 24, Harley street, Cavendish square, W. *Council*, 1859, 1864-65, 1869. *Vice-Pres.* 1861-63. *Pres.* 1867-68.

1863 Davis, Robert Alex., M.D., L.R.C.P. Ed. (exam.), Resident Physician, County Asylum, Burntwood, near Lichfield, Stafford.

1859 Day, William Henry, M.D., Physician to the Margaret street Dispensary; 10, Manchester square.

1866 Deans, John, Shepherd's House, Cranbrook, Kent.

1861 De la Motte, Henry D. C., Swanage, Dorset.

1869 Dempsey, Joseph Maldon, M.D., 27, Charterhouse square, E.C.

Elected

1859 Denny, John, L.R.C.P. Ed., 1, Sumner terrace, Onslow square, Brompton, S.W.

1860 Dickenson, John, F.R.C.S., Hon. Surgeon to the Wrexham Infirmary; Wrexham, Denbighshire.

1859 Dickson, Joseph, M.D., 56, Bath street, Jersey.

1859 Dixon, John, M.D., 47, Jamaica road, Bermondsey, S.E.

1859 Drage, Charles, M.D., Hatfield, Herts. *Council*, 1861-64.

1859 Druitt, Robert, M.R.C.P., 37, Hertford street, Mayfair, W. *Council*, 1859-60. *Vice-Pres.* 1862-64.

1859 Druitt, William, F.R.C.S., Wimborne, Dorset.

1859 Duncan, James, M.B., 8, Henrietta st., Covent garden, W.C.

1859 Duncan, Peter Charles, M.D., 46, Great Marlborough street, W., and 47, Torrington square, W.C.

1867 Dunderdale, William, M.D., 25, Neville terrace, Hornsey road, N.

1859 Dunn, Robert, F.R.C.S., 31, Norfolk street, Strand, W.C. *Council*, 1860. *Vice-Pres.* 1861-62.

1861 Earle, James Lumley, M.D., Obstetric Surgeon to the Queen's Hospital; 92, New Hall street, Birmingham. *Council*, 1866-67.

1859* Easson, James, Stoke Pogis, Slough, Buckinghamshire.

1861 Eastlake, Henry E., F.K.Q.C.P. Ireland, Physician-Accoucheur to the St. Marylebone General Dispensary; 48, Welbeck street, W. *Council*, 1866-68.

1866 Easton, John, M.D., 20, Connaught square, Hyde Park, W.

1867 Edis, Arthur W., M.B., Lond., Physician-Accoucheur to the St. James's Dispensary; 23, Sackville street, W.

1861 Edwards, Thomas Edwin, L.R.C.P. Lond.; 98, Gloucester crescent, Hyde park, W.

1859 Elkington, Francis, M.D., Clarendon, Frontenac, Canada West. *Council*, 1859. *Vice-Pres.* 1860-61.

1859 Elliott, Robert, F.R.C.S., Senior Surgeon to the Chichester Infirmary; North street, Chichester.

1866 Elliott, Robert Arthur, Assistant-Surgeon 95th Regiment, (India). Chichester.

1862 Ellis, Edward, M.D., Physician to the Samaritan Free Hospital, and to the Victoria Hospital for Children; 118, Warwick street, Belgravia, S.W.

Elected

1868 Ellis, James, M.D., late Resident Physician at St. Luke's Hospital.

1861 Ellis, Robert, Obstetric Surgeon to the Chelsea, Brompton, and Belgrave Dispensary; 63, Sloane street, S.W. *Council*, 1868-69.

1862 Ellison, James, M.D., 14, High street, Windsor, Berks.

1861 Ewen, Henry, F.R.C.S., Long Sutton, near Wisbeach, Lincolnshire.

1865 Fairbank, Thomas, M.D., Surgeon to H.M. the Queen and the Royal Household, Windsor Castle; Sheet street, Windsor.

1859 Faircloth, Richard, F.R.C.S., Newmarket, Cambridgeshire.

1867 Fairland, Edwin James, L.R.C.P. Ed., Staff Assistant-Surgeon, 65th Regiment, Ship Street Barracks, Dublin.

1869 Farquharson, William, M.D., Assistant-Surgeon, Garrison, Bangalore,

1861 Farr, Geo. F., L.R.C.P. Ed., 20, West Square, Southwark, S.

1868 Fegan, Richard, M.D., The Fairfield, Old Charlton, Kent.

1859 Fergusson, Sir William, Bart., F.R.C.S., F.R.S., Sergeant-Surgeon to H.M. the Queen, Professor of Surgery in King's College and Surgeon to King's College Hospital, Consulting Surgeon to the Samaritan Free Hospital; 16, George street, Hanover square, W. *Vice-Pres.* 1862-63.

1869 Fergusson, William Edward Laing, M.D., 43, Claremont square, Pentonville, N.

1861 Fetherston, Gerald H., M.D., L.R.C.P. Ed.; Hon. Physician to the Melbourne Benevolent Asylum, Prahran, Melbourne, Victoria. *Hon. Loc. Sec.*

1865 Fitzpatrick, Thomas, M.D., 30, Sussex gardens, Hyde park, W.

1868 Fletcher, Edward, Lygon street, Carlton, Melbourne, Victoria.

Elected

1865 Fowler, James, F.S.A., Hon. Surgeon to the Clayton Hospital and Wakefield General Dispensary; 13, South Parade, Wakefield. *Hon. Loc. Sec.*

1866 Fox, Cornelius Benjamin, M.D., South Cliff, Scarborough.

1862 Frain, Joseph, M.D., Hon Surgeon to the South Shields Dispensary, Frederick street, South Shields.

1861 Frankland, Thomas Thrush, Surgeon to the Ripon Dispensary, Ripon, Yorkshire.

1867 Freeman, Henry W., 38, Gay street, Bath.

1867 Fryer, Charles, L.K.Q.C.P. Ireland; 69, Rumford street, Chorlton-on-Medlock, Manchester.

1867 Fuller, Charles C., 29, Albany street, Regent's park, N.W.

1863 Galton, John Henry, M.B. Lond., Foo-choo, China.

1863 Garman, Henry Vincent, Kent House, Bow road, E.

1859 Gaskoin, George, 7, Westbourne park, W.

1862 Gayton, William, L.R.C.P., Ed., 85, Brick lane, Spitalfields, N.E.

1859 Gervis, Henry, M.D., Assistant Obstetric Physician to, and Lecturer upon Forensic Medicine at, St. Thomas's Hospital; Consulting Physician to the Deaf and Dumb Asylum, and to the Asylum for Fatherless Children; 12, St. Thomas's street, Southwark, S.E. *Council,* 1864-66. *Hon. Sec.* 1867-69.

1866 Gervis, Frederick Heudebourck, 33, Adelaide road, Haverstock hill, N.W.

1866 Giddings, William Kitto, Calverley, near Leeds, Yorkshire.

1860 Gill, Samuel Lawrence, L.R.C.P. Ed., 4, Campbell terrace, Bow road, E.

1867 Gittins, John, L.R.C.P. Ed., St. Olave's Union, Parish street, Southwark, S.E.

1868 Godwin, Ashton, M.D., 11, Pelham crescent, Brompton, S.W.

1861 Goss, Samuel Day, M.D., F.R.G.S., 111, Kennington park road, S.E.

1859 Goulstone, John Griffith, M.D., 30, Clarence street, Liverpool.

Elected

1861 Gream, George Thompson, M.D., F.R.C.P., Physician-Accoucheur to H.R.H. the Princess of Wales; 2, Upper Brook street, Grosvenor square, W. *Council*, 1862-63. *Vice-Pres.* 1864-66.

1859 Greenhalgh, Robert, M.D., Physician-Accoucheur to, and Lecturer on Midwifery at, St. Bartholomew's Hospital; Consulting Physician to the Samaritan Free Hospital, and to the City of London Lying-in Hospital; 72, Grosvenor street, W. *Council*, 1863, 1867-69. *Vice-Pres.* 1864-66.

1863 Griffith, G. de Gorrequer, Physician to the Hospital for Women and Children, Pimlico; Physician-Accoucheur to St. Saviour's Maternity; 9, Lupus street, St. George's square, S.W.

1859 Griffith, Thomas Taylor, F.R.C.S., Consulting Surgeon to the Wrexham Infirmary; Wrexham, Denbighshire.

1859 Grimsdale, Thos. F., L.R.C.P. Ed., Surgeon to the Lying-in Hospital, and late Lecturer on Diseases of Children, &c., at the Royal Infirmary School of Medicine; 29, Rodney street, Liverpool. *Council*, 1861-62.

1865 Gwyn, George F., Westcroft House, Hammersmith, W.

1867 Hadaway, James, L.R.C.P. Ed., 47B, Welbeck street, Cavendish square, W.

1859 Haden, Francis Seymour, F.R.C.S., 62, Sloane street, S.W. *Council*, 1861-63, 1868-69. *Vice-Pres.* 1865-67.

1863 Hailey, Hammett, Tickford Lodge, Newport Pagnell, Bucks.

1859 Hall, Alfred, M.D., Senior Physician to the Brighton Dispensary; 30, Old Steyne, Brighton. *Council*, 1864-65. *Vice-Pres.* 1866-68. *Hon. Loc. Sec.*

1859 Hall, Frederick, 1, Jermyn street, St. James's, S.W.

1867 Hall, John Henry Wynne, L.R.C.P. Ed., Barking road, Essex, E.

1862 Hall, William, Lecturer on Physiology and Diseases of Women and Children, Leeds School of Medicine; Hillary place, Leeds. *Hon. Loc. Sec.*

1860 Hardey, Key, Surgeon to the West City Dispensary; 4, Wardrobe place, Doctors' Commons, E.C.

Elected

1859 Harper, Philip H., F.R.C.S., 30, Cambridge street, Hyde park, W.

1863 Harries, Gwynne, M.D., Pembroke Dock, South Wales.

1859 Harrinson, Isaac, F.R.C.S., Castle street, Reading, Berks. *Council*, 1862-65. *Hon. Loc. Sec.*

1862 Harris, Charles, M.D., Northiam, Sussex.

1861 Harris, Herbert Robey, 52, Bolton street, Bury, Lancashire.

1867 Harris, William H., M.D., Ostacamund, Neilgherries, India [agent: Mr. H. K. Lewis, Gower street].

1861 Harris, William John, 4, Bedford row, Worthing.

1865 Harvey, Robert, M.D., Civil Surgeon of Bhurtpore, near Agra, India [*vid* Bombay].

1859 Harvey, William, 48, Lonsdale square, Islington, N.

1864 Hasenfeld, Emmanuel, M.D., Pesth, Hungary.

1867 Haviland, Alfred, late Surgeon to the Bridgwater Infirmary; St. John's Wood, N.W.

1861 Haviland, Edward Savage, M.D., 13, Lyon terrace, Maida hill, W.

1868 Hay, Thomas Bell, L.R.C.P. Ed.; 43, Caledonian road, N.

1865 Hayes, Hawkesley Roche, Basingstoke, Hants.

1862 Hayman, Charles Christopher, M.D., 22, Grand parade, Eastbourne, Sussex.

1869 Hayward, Sidney, M.D., Physician to the Victoria Hospital for Children, and to the Samaritan Free Hospital for Women; 4, Hobart place, Eaton square, S.W.

1864 Head, Edward, M.B., Obstetric Physician to, and Lecturer on Midwifery at, the London Hospital; 91, Harley street, W.

1865 Heckford, Nathaniel, East London Children's Hospital, Ratcliff cross, E.

1867 Hembrough, John William, M.D., Waltham, Grimsby.

1860 Hess, Augustus, M.D., Physician to the Jews' Hospital, Norwood; 14, Artillery place, Finsbury square, E.C.

1859 Hewitt, Graily, M.D., F.R.C.P., Professor of Midwifery in University College, London, and Obstetric Physician to University College Hospital; 36, Berkeley square, W. *Hon. Sec.* 1859-64. *Treas.* 1865-66. *Vice-Pres.* 1867-68. *Pres.* 1869.

Elected

1862 Hewitt, Tom Smith, M.D., Ivy Cottage, Winkfield, Windsor, Berks.

1867 Hickinbotham, James, L.R.C.P., Ed., 405, Nechell's Park road, Birmingham.

1860 Hicks, John Braxton, M.D., F.R.C.P., F.R.S., Assistant Physician-Accoucheur to, and one of the Lecturers on Midwifery and the Diseases of Women and Children at, Guy's Hospital; Physician to the Royal Maternity Charity, and to the Royal Infirmary for Diseases of Children and Women, Waterloo road; 9, St. Thomas's street, Southwark, S.E. *Council*, 1861-62, 1869. *Hon. Sec.* 1863-65. *Vice-Pres.* 1866-68.

1860 Higgs, Thomas Frederic, L.R.C.P. Ed., Wolverhampton street, Dudley, Worcestershire.

1868 Hime, Thomas Whiteside, M.B., 5, Howard street, Sheffield.

1865 Hodder, Edward M., M.D., Lecturer on Obstetrics, Toronto School of Medicine; Toronto, Canada West.

1859 Hodges, Richard, M.D., F.R.C.S., 1, Montagu street, Portman square, W.

1859 Hodgson, George Frederick, 52, Montpellier rd., Brighton.

1864 Hoffmeister, William Carter, M.D., Surgeon to the Queen in the Isle of Wight; Busigny House, Cowes, Isle of Wight.

1859 Holman, Constantine, M.D., Reigate, Surrey. *Council*, 1867-69.

1860 Holman, Henry Martin, M.D., Hurstpierpoint, Sussex.

1864 Hood, Wharton Peter, M.D., 65, Upper Berkeley street, Portman square, W.

1866 Horniblow, Richard E. Brain, M.D., 24, Lansdowne place, Leamington.

1861 Horton, George Edward, Castle street, Dudley, Worcestershire.

1864 Houghton, Henry George, L.K.Q.C.P. Ireland; 6, Mount street, Grosvenor square, W.

1859 Hussey, Edward Law, F.R.C.S., Senior Surgeon to the Radcliffe Infirmary, and Consulting Surgeon to the County Lunatic Asylum and the Warneford Asylum; 104, St. Aldate's, Oxford.

Elected

1859 Hutchinson, Jonathan, F.R.C.S., Surgeon to the London Hospital; 4, Finsbury circus, E.C. *Council*, 1869.

1865 Hutchinson, Thomas Steers, L.R.C.P., Ed., Newington, Sittingbourne, Kent.

1861 Hutton, Charles, M.D., Physician to the General Lying-in-Hospital; 26, Lowndes street, Belgrave square, S.W.

1859 Ilott, James William, Bromley, Kent.

1859 Image, William Edmund, F.R.C.S., Senior Surgeon to the Suffolk General Hospital; Bury St. Edmund's, Suffolk.

1864 Jackson, Edward, M.B., Surgeon to the Sheffield Hospital for Women; Fern Bank, Glossop road, Sheffield.

1864 Jackson, Robert, M.D., 53, Notting Hill square, W.

1861 Jackson, Thomas Hayes, M.D., F.R.C.P. Ed., Senior Consulting-Surgeon to the Darlington Hospital; 18, Market place, Darlington, Durham.

1868 James, Alfred, M.D., Perry vale, Forest Hill.

1859 James, Henry, F.R.C.S., Holmwood, Weybridge, Surrey. *Council*, 1862-63.

1862 Jay, Frederick Fitzherbert; Peninsular and Oriental Company's Service; The Mazagon, Bombay.

1863 Jenkins, Robert W., 13, Charlotte street, Bedford square, W.C.

1859 Jennings, Joseph C. S., Abbey House, Malmesbury, Wilts.

1860 Jepson, Henry, F.R.C.S., Surgeon to the Kingston Dispensary; Hampton, Middlesex, S.W.

1862 Johnson, Edward, M.D., 19, Cavendish place, Cavendish square, W.

1861 Jones, Edward, M.D., The Park, Sydenham, Kent.

1868 Jones, Evans, Ty-Mawr, Aberdare, Glamorganshire.

1859 Jones, George, 12, New hall street, Birmingham.

1868 Jones, John, 60, King street, Regent street, W.

1859 Jones, John William, Port Dinorwic, near Bangor, Caernarvonshire.

1866 Jones, Robert, 19, Stretford road, Hulme, Manchester.

1868 Jones, William, L.R.C.P., Ty-Newydd, Ruabon, Denbighshire.

Elected

1868 JORDAN, WILLIAM ROSS, Manor House, Moseley, near Birmingham.

1867 JUNKER, F. ETHELBERT, M.D., 31, Somerset street, Portman square, W.

1859 KEALY, JOHN ROBERT, M.D., Admiralty Surgeon, Portsmouth Harbour, Ashley House, Gosport, Hants. *Hon. Loc. Sec.*

1859 KEELE, GEORGE THOMAS, 81, St. Paul's road, Highbury, N.

1859 KENDALL, THOMAS MARSTERS, F.R.C.S., Medical Attendant to their R. H. the Prince and Princess of Wales at Sandringham, Surgeon to the West Norfolk and Lynn Hospital; King's Lynn, Norfolk.

1868 KENYON, GEORGE A., 1, St. George's place, Hyde Park Corner, S.W.

1861 KERBEY, WILLIAM HOLMAN, Weobley, Herefordshire.

1865* KERNOT, GEORGE CHARLES, M.D., 3, Chrisp street, Poplar, E.

1859 KIALLMARK, HENRY WALTER, 66, Prince's square, Westbourne grove, W.

1860 KINGSFORD, EDWARD, F.R.C.S., Surgeon to the Sunbury Dispensary; Sunbury, Middlesex, S.W.

1862 KIRKPATRICK, JOHN RUTHERFORD, M.B. Dubl., 32, Rutland square, Dublin.

1860 KISCH, JOSEPH, 2, Circus place, Finsbury circus, E.C.

1867 KNAGGS, HENRY G., M.D., 49, Kentish Town road, N.W.

1867 LANGFORD, CHARLES P., 187, Goswell road, E.C.

1859 LANGMORE, JOHN CHARLES, M.B., F.R.C.S., 12, Sussex gardens, Hyde park, W. *Council*, 1861-64. *Vice-Pres.* 1869.

1866 LANGSTON, THOMAS, L.R.C.P. Ed., 29, Broadway, Westminster, S.W.

1862 LANPHIER, RICHARD, M.B. Dubl., Alford, Lincolnshire.

1867 LEAF, WALTER, Surgeon to the St. Marylebone General Dispensary; 14, Furnival's Inn, Holborn, E.C.

1859 LEE, NEWTON B.C., 2, Barford terrace, Liverpool road, N.

1859 LEECH, EDWARD, Pallant, Chichester, Sussex.

Elected

1860 Leishman, William, M.D., Physician to the Glasgow Royal Infirmary, and to the University Lying-in Hospital, Regius Professor of Midwifery in the University of Glasgow; 156, Bath street, Glasgow. *Council*, 1866-68. *Vice-Pres.* 1869.

1868 Leslie, William Burnup, M.D., Stonehaven, Kincardineshire.

1867 Lilley, Frederick John, L.R.C.P. Ed., 222, South Lambeth road, S.W.

1867 Lithgow, James, M.D., Consulting-Surgeon to the Weymouth Infirmary; 10, Royal Terrace, Weymouth.

1868 Llewellyn, Evan, 9, Mount place, London Hospital, E.

1868 Locking, John, M.D., Physician to the British Lying-in Hospital; 17, Connaught square, Hyde park, W.

1859 Locock, Sir Chas., Bart., M.D., F.R.C.P., 26, Hertford street, Mayfair, W. *Honorary President.*

1859 Lombe, Thomas Robert, M.D., Bemerton, Torquay.

1861 Love, Gilbert, Wimbledon, Surrey, S.W.

1866 Lovegrove, Charles, M.D., Sevenoaks, Kent.

1866 Low, Alex. James, Le Coin, St. Brelade's, Jersey.

1862 Lowe, George, F.R.C.S., Burton-on-Trent, Staffordshire.

1866 Lucey, William Cubitt, M.D., Norfolk villas, Junction road, Upper Holloway, N.

1869 Lydall, Wykeham H., 2, Caroline place, Mecklenburgh square.

1868 Lynch, J. Roche, 30, Kensington Park road, W.

1859 Mackinder, Draper, M.D., Consulting-Surgeon to the Gainsborough Dispensary; Gainsborough, Lincolnshire.

1866 Maddever, John Coombe, M.D., 59, High street, Rothesay.

1859 Macrae, John, 4, High street, Lewes, Sussex.

1861 McVeagh, Dennis, L.K.Q.C.P. Ireland, 33, Bishop street, Coventry, Warwickshire.

1859 Madge, Henry M., M.D., 32, Fitzroy square, W. *Council*, 1863-65.

1868 March, Henry Colley, M.D., 18, Lord street, Rochdale.

1860 Marley, Henry Frederick, Padstow, Cornwall.

Elected

1859 Marley, Richard, Bromyard, near Worcester, Herefordshire.

1868 Marriott, Charles William, Dynevor House, Leamington, Warwickshire.

1862 Marriott, Robert Buchanan, Swaffham, Norfolk.

1862 Marshall, John, Liverpool House, Dover.

1859 Marshall, John Brake, Nightingale road Downs, Clapton, N.E.

1859 Marshall, Peter, 43, Bedford square, W.C.

1864 Martin, Laurence J., M.D., Physician to the Melbourne Lying-in Hospital; 126, Collins street east, Melbourne, Victoria.

1859 Martyn, William, M.D., F.R.C.S., 6, Trevor terrace, Rutland gate, Brompton, S.W.

1866 Mattei, Antoine, M.D., Professor of Midwifery, Rue Rivoli 150, Paris.

1861 Matthews, John, M.D., 4, Mylne street, Myddelton square, E.C.

1867 May, Henry, L.R.C.P. Lond., 395, Nechell's Park road, Birmingham.

1859 Meadows, Alfred, M.D., Physician-Accoucheur to the General Lying-in Hospital, York road; Physician to the Hospital for Women, Soho square; 27, George street, Hanover square, W. *Council*, 1862-64. *Hon. Sec.* 1865-66. *Hon. Lib.* 1865. *Treas.* 1867-69.

1867 Mickley, Arthur George, M.B. Lond., House Surgeon, General Hospital, Nottingham.

1865 Middleton, John W., M.D., 8, Rue Marie de Bourgogne, Brussels.

1859 Miles, Charles, Surgeon to the Paddington Dispensary; 27, Craven road, Westbourne terrace, W.

1867 Miller, Benjamin, 17, St. James's place, S.W.

1859 Mitchell, Joseph Thomas, F.R.C.S., 8, Percy place, Clapham road, S.W. *Council*, 1863-67.

1867 Mitchell, Robert Nathal, M.D., 1, Amersham park villas, New Cross, Kent.

1866 Molloy, Wm. Thomas, Balmoral, Victoria.

Elected

1869 Moore, Joseph, M.D., 9, Linden villas, Blue Anchor road, Bermondsey, S.E.

1859 Moorhead, John, M.D., Surgeon to the Weymouth Infirmary and Dispensary; Weymouth, Dorset.

1868 Mootoosawmey Moodelly, P. S., M.D., Native Surgeon, Uncovenanted Service, Madras.

1863 Morgan, Edward, Park street, Llanelly, Caermarthenshire.

1869 Morgan, W. H., Surgeon, 23rd Regiment, Travancore.

1865 Moseley, George, F.R.C.S., 51, Priory road, Kilburn, N.W.

1865 Moxey, David Anderson, M.D., 7, Prince's street, Hanover square, W.

1863 Murphy, William, M.D., Peitermaritzburg, South Africa.

1859 Murray, Gustavus Charles P., M.D., Obstetric Physician to the Great Northern Hospital; 17, Green st., Grosvenor square, W. *Council*, 1864-65. *Hon. Sec.* 1866-69.

1859 Musgrave, Johnson Thomas, L.R.C.P. Ed., 39, Finchley road, N.W. *Council*, 1859-60.

1859 Napper, Albert, Broad Oak, Cranleigh, Guildford, Surrey. *Council*, 1866-68.

1863 Nason, John James, M.B. Lond., 11, Bridge street, Stratford-upon-Avon.

1859 Nason, Richard Bird, Nuneaton, Warwickshire.

1859 Neal, James, M.D., Hon Surgeon to the Lying-in Hospital, Birmingham; 85, New Hall street, Birmingham.

1867 Neate, Charles, Weobley, Herefordshire.

1866 Neild, James Edward, M.D., Lecturer on Forensic Medicine, Melbourne University; 166, Collins street east, Melbourne.

1859 Newman, William, M.D., Surgeon to the Stamford and Rutland Infirmary; St. Martin's, Stamford-Baron, Northamptonshire.

1859 Newton, Edward, F.R.C.S., 4, Upper Wimpole Street, W. *Council*, 1865-67.

1868 Nicholls, James, M.D., Chelmsford, Essex.

1861 Nichols, George W., Augusta House, Rotherhithe, S.E.

1869 Norton, Selby, M.D., Rye House, Putney Hill, Surrey.

Elected

1859 Nunn, Thomas William, F.R.C.S., Surgeon to the Middlesex Hospital; 8, Stratford place, Oxford street, W. *Council*, 1868-69.

1868 Oates, Parkinson, M.D., 164, Cambridge street, Pimlico, S.W.

1859 Oldham, Henry, M.D., F.R.C.P., Obstetric Physician to, and Lecturer on Midwifery and Diseases of Women and Children at, Guy's Hospital; 26, Finsbury square, E.C. *Vice-Pres.* 1859. *Council*, 1860, 1865-66, 1868-69. *Treas.* 1861-62. *Pres.* 1863-64.

1859 Oldham, James, F.R.C.S., Consulting Surgeon to the Brighton Lying-in Institution; 53, Norfolk square, Brighton. *Council*, 1866-68.

1865 Ortiz, Manuel Maria, M.D., Henry street, Port of Spain, Trinidad.

1863 Oswald, James Waddell Jeffries, L.R.C.P. Ed., 2, Redcross street, E.C.

1863 Owen, Albert Philip, Herne Hill, Surrey.

1859 Palfrey, James, M.D., Assistant Obstetric Physician to the London Hospital, and Obstetric Physician to the Farringdon General Dispensary; 25, Finsbury place, E.C.

1867 Parks, John, The Wylde, Bury, Lancashire.

1863 Parson, Edward, M.D., Physician-Accoucheur to, and Lecturer on Midwifery and Diseases of Women and Children at, the Charing Cross Hospital; Medical Officer for Out-patients to Queen Charlotte's Lying-in Hospital; 8, Bolton street, Mayfair, W. *Council*, 1869.

1865* Paterson, James, M.D., Rosewall, Partick, Glasgow.

1860 Payne, Charles Henry, M.D., Wimbledon, Surrey.

1866 Peacock, Albert Louis, Ford Cottage, Churchinford, near Honiton, Devonshire.

1864 Pearson, David Ritchie, M.D., 23, Upper Phillimore place, Kensington, W.

1859 Peirce, R. King, 16, Norland place, Notting Hill, W.

Elected

1866 Phillips, John Jones, M.D., Demonstrator of Anatomy at Guy's Hospital, and Physician to the Royal Infirmary for Children and Women, Waterloo road; 20, Finsbury square, E.C.

1866 Pilcher, William John, 43, West street, Boston, Lincolnshire.

1859 Pinchard, Benjamin, M.D., Cottenham, Cambridgeshire.

1868 Playfair, George Ranken, M.D., Surgeon-Major, H.M.'s Indian Army, Principal of the Medical College, Agra.

1864 Playfair, William, M.D., Assistant-Physician for the Diseases of Women and Children to King's College Hospital; 5, Curzon street, Mayfair, W. *Council*, 1867. *Hon. Librarian*, 1868-69.

1859* Pollard, William, Surgeon to the Torbay Hospital; Southlands, Torquay, Devon.

1860 Pollock, Timothy, M.D., 26, Hatton Garden, E.C. *Council*, 1866-68.

1860 Porter, Charles, 54, Digbeth, Birmingham.

1859 Potter, Jephson, M.D., Physician to the Liverpool General Hospital for Consumption; 3, Brooklands, Southport, Liverpool.

1864 Potter, John Baptiste, M.D., 2, Hertford street, Mayfair, W.

1859 Pound, George, Odiham, Hants.

1863 Powell, Josiah T., M.D., 347, City road, E.C.

1864 Powell, Llewellyn, Christchurch, Canterbury, New Zealand.

1864 Price, William Nicholson, Lecturer on Midwifery at the Leeds School of Medicine; 7, East parade, Leeds.

1863 Price, William Preston, M.D., Surgeon to the Metropolitan Infirmary for Scrofulous Children, Margate; 1, Ethelbert Crescent, Margate.

1859 Priestley, W. O., M.D., F.R.C.P., Professor of Midwifery in King's College London; Physician-Accoucheur to King's College Hospital; and Consulting Physician-Accoucheur to the St. Marylebone Infirmary; 17, Hertford street, Mayfair, W. *Council*, 1859-61, 1865-66. *Vice-Pres.* 1867-69.

1862 Prince, Frederic, Sawston, Cambridgeshire.

Elected

1864 Pugh, William Russ, M.D., 131, Collins street east, Melbourne, Victoria.

1859 Radford, Thomas, M.D., Consulting Physician to St. Mary's Hospital, Manchester; Moor field, Higher Broughton, Manchester. *Vice-Pres.* 1859.

1859 Ramsay, John Allen, L.R.C.P. Ed., Great Shelford, Cambridge.

1859 Randall, John, M.D., Lecturer on Medical Jurisprudence, St. Mary's Hospital Medical School; Medical Officer, St. Marylebone Infirmary; 14, Portman street, Portman square, W.

1860 Ransom, Robert, M.D., F.R.C.S., 5, Jesus lane, Cambridge.

1861 Rasch, Adolphus A. F., M.D., Physician to the Eastern Dispensary of the German Hospital; 7, South street, Finsbury square, E.C.

1860* Rayner, John, M.D., Swaledale House, Quadrant road north, Highbury New park, N.

1859 Raynes, Henry, Gringley-on-the-hill, Bawtry, Yorkshire.

1859 Ree, Henry Pawle, L.R.C.P. Ed., F.R.C.S., St. John's, Fulham, S.W.

1859 Remington, Thomas, M.D., Medical Officer to the Clapham General Dispensary; 1, Grove place, North Brixton, S.W.

1860 Renton, John, Orchard House, Shotley bridge, Gateshead, Durham.

1862 Richards, David, 8, St. George's place, Brighton, Sussex.

1860 Richards, John Smith Crosland, 36, Bedford square, W.C.

1859 Richards, Samuel, M.D., 36, Bedford square, W.C. *Council*, 1864-66.

1862 Richards, S. Smith C., 36, Bedford square, W.C.

1859 Richardson, Richard, L.R.C.P. Ed., Rhayader, Radnorshire.

1859 Richardson, William Thomas, Ivy House, Highgate, N.

1859* Roberts, David Lloyd, M.D., Surgeon to St. Mary's Hospital, Manchester; 23, St. John's street, Deansgate, Manchester, *Hon. Loc. Sec. Council*, 1868-69.

1867 Roberts, David W., M.D., 56, Manchester street, W.

Elected

1860 Roberts, Robert Price, Shamrock House, Rhyl, Flintshire.

1867 Robinson, C. A., 25, Myra villas, King Henry's Road, Haverstock Hill, N.W.

1859 Robinson, Thomas, M.D., 35, Lamb's Conduit street, W.C.

1868 Robson, Hope F. A., M.D., 46, Great Marlborough street, W.

1868 Rogers, Adam MacDougall, Surgeon, Bombay Army [Agents: Messrs. Grinlay and Co., 55, Parliament street, S.W.]

1859 Rogers, William Richard, M.D., Physician to the Samaritan Free Hospital; 56, Berners street, Oxford street, W.

1859 Roots, William Sudlow, F.R.C.S., F.L.S., Surgeon to the Royal Establishment at Hampton Court, Kingston-on-Thames.

1860 Roper, Alfred George, 57, North End, Croydon, Surrey.

1865 Roper, George, Bank House, Aylsham, Norfolk.

1859 Rose, Henry Cooper, M.D., High street, Hampstead, N.W.

1859 Ross, Daniel, Surgeon to the Metropolitan Police; 10, Commercial place, Commercial road east, E.

1859 Routh, Charles Henry Felix, M.D., Physician to the Samaritan Free Hospital for Women and Children; 52, Montagu square, W. *Council*, 1859-61.

1866 Rugg, George Philip, M.D., 1, Stockwell villas, Clapham road, Stockwell, S.W.

1861 Russell, William Alexander, L.R.C.P. Ed., St. Peter street, St. Alban's, Herts.

1866 Saboia, V., M.D., Rio de Janeiro [*per* Dr. B. Barauna, 15, Palace Gardens villas, Kensington, W.]

1864 Salter, John H., D'Arcy House, Tolleshunt D'Arcy, Kelvedon, Essex.

1868* Sams, John Sutton, St. Peter's Lodge, Eltham road, Lee, Kent.

1860 Sanders, Godfrey, F.R.C.S., 17, Brewer street, Maidstone, Kent.

Elected

1865 Sansom, Arthur Ernest, M.D., Physician to the Royal Hospital for Diseases of the Chest, City road; 29, Duncan terrace, Islington, N.

1863 Savage, Henry, M.D., Consulting Physician to the Samaritan Hospital for Women; 45, Baker street, and South Laurie park, Norwood, S.

1859 Scott, John, F.R.C.S., Surgeon to the Hospital for Women, Soho square; 49, Harley street, Cavendish square, W. *Council*, 1868-69.

1868 Sealy, George J., M.D., Oatlands Park, Weybridge, Surrey.

1860 Sedgwick, Leonard William, M.D., 2, Gloucester terrace, Hyde park, W.

1863 Sequeira, Henry Little, 1, Jewry street, Aldgate, E.C.

1866 Sequeira, James Scott, 34, Leman street, Goodman's fields, E.

1860 Sewell, Charles Brodie, M.D., 76, Guilford street, Russell square, W.C., and 13, Fenchurch street, E.C.

1862 Sharman, Malim, Surgeon to the Birmingham Free Hospital for Sick Children; 18, New Hall street, Birmingham.

1859 Sharpin, Henry Wilson, F.R.C.S., Surgeon to the Bedford General Infirmary, Bedford.

1860 Shaw, George, Portland House, Battersea, S.W.

1869 Shaw, Henry Sissmore, 119, Upgate, Louth, Lincolnshire.

1859 Shearman, Edward James, M.D., Moorgate, Rotherham, Yorkshire.

1859 Sheehy, William Henry, L.R.C.P. Ed., 4, Claremont square, Pentonville, N.

1867 Shepherd, Frederick, L.R.C.P. Ed., 28, Rochester road, Kentish Town, N.W.

1866 Sheraton, George Robert, L.R.C.P. Ed., Sedgefield, Ferryhill, Durham.

1862 Shillingford, Isaac Shortland, 124, Hill street, Peckham, S.E.

1859 Shipton, William Parker, Consulting Surgeon to the Devonshire Hospital; Buxton, Derbyshire.

Elected

1860 Shirley, Henry James, F.R.C.S., Finchingfield, Braintree, Essex.

1861 Shortt, John, M.D., Surgeon H.M. Madras Army, and Superintendent-General of Vaccination, Madras Presidency. *Hon. Loc. Sec.* [Agents:

1860 Skinner, Thomas, M.D., Obstetric Physician to the Lying-in Hospital; 1, St. James's road, Liverpool. *Council*, 1865-66. *Hon. Loc. Sec.*

1859 Sleeman, Philip Rowling, F.R.C.S., Montrose House, Queen's road, Clifton.

1861 Sloman, Samuel George, Farnham, Surrey.

1861 Slyman, William Daniel, 26, Caversham road, Kentish Town, N.W.

1860 Smart, Thomas Tovey, L.R.C.P. Ed., South Villa, Bedminster, Bristol.

1859 Smiles, William, M.D., Surgeon to the House of Correction, Cold Bath Fields; 44, Bedford square, W.C.

1868 Smith, Charles Case, F.R.C.S.

1865 Smith, H. Fly, M.B., Physician-Accoucheur to the St. George's and St. James's Dispensary; Assistant-Physician to the Hospital for Women; 41, Chepstow villas, Westbourne grove, W.

1867 Smith, Heywood, M.B. Oxon., Assistant-Physician to the Hospital for Women, Soho square; 42, Park street, Grosvenor square, W.

1859 Smith, Protheroe, M.D., Physician to the Hospital for Women, Soho square; 42, Park Street, Grosvenor square, W.

1859 Smith, William Johnson, M.D., Consulting Physician to the Weymouth Infirmary and Dispensary; Greenhill, Weymouth, Dorset. *Council*, 1869.

1859 Smith, W. Tyler, M.D., F.R.C.P., Physician-Accoucheur to, and Lecturer on Midwifery and Diseases of Women and Children at, St. Mary's Hospital; 21, Upper Grosvenor street, W. *Treasurer & Vice-Pres.* 1859-60. *Pres.* 1861-62. *Council*, 1863-69.

Elected

1860 Snell, Edmund, L.R.C.P. Ed., 59, Stepney green, E.

1859 Somerville, Charles, M.D., Bloxwich, Walsall, Staffordshire.

1866 Soper, William, Medical Officer, Jews' Hospital, Norwood; 4, Clapham rise, S.

1869 Spaull, Barnard, F.R.C.S., 5, Vale place, Hammersmith, W.

1868 Spaull, Barnard E., 2, Vale place, Hammersmith, W.

1859 Spencer, George, 8, Kensington park road, W.

1860 Spencer, Lawrence, M.D., 9, Winckley square, Preston, Lancashire.

1862 Spry, George Frederick, M.D., Assistant-Surgeon 2nd Life Guards, Regent's park barracks, Albany street, N.W.

1867 Squarey, C. E., Resident Medical Officer, University College Hospital, Gower street, W.C.

1859 Squire, William, 6, Orchard street, Portman square, W. *Council*, 1866-68.

1860 Stedman, Robert Savignac, Sharnbrook, Bedfordshire.

1866 Steele, Arthur Browne, Lecturer on Midwifery, Royal Infirmary School of Medicine; 62, Mount pleasant, Liverpool.

1869 Steele, Henry Murray, Grove road, Holloway.

1859 Stone, Joseph, M.D., 84, Bloomsbury, Oxford street, Manchester.

1860 Stone, Thomas, F.R.C.S., Resident Surgeon to Christ's Hospital, Newgate street, E.C.

1859 Stowers, Nowell, 125, Kennington park road, Kennington, S.E.

1866 Strange, William Heath, M.D., 4, The Avenue, Belsize park, Hampstead, N.W.

1859 Stutter, Frederick Augustus, M.D., Farnboro' House, Upper Sydenham, Kent.

1862 Sutherland, William, M.D., 22, George street, Croydon, Surrey.

1862 Sutton, Field Flowers, M.D., Balham hill, Clapham, S.

Elected

1859 Swayne, Joseph Griffiths, M.D., Physician-Accoucheur to the Bristol General Hospital; Harewood House, 74, Pembroke road, Clifton, Bristol. *Council,* 1860-61. *Vice-Pres.* 1862-64. *Hon. Loc. Sec.*

1860 Sweeting, George Bacon, M.R.C.P., King's Lynn, Norfolk.

1859 Symonds, Frederick, F.R.C.S., Surgeon to the Radcliffe Infirmary; 32, or 35, Beaumont street, Oxford. *Council,* 1862-65. *Hon. Loc. Sec.*

1866 Tannahill, Robert Dunlop, M.D., Consulting Physician to the Lying-in Hospital; 106, Bath street, Glasgow.

1859 Tanner, Thos. Hawkes, M.D., F.L.S., 9, Henrietta street, Cavendish square, W. *Hon. Sec.* 1859-62. *Vice-Pres.* 1863-65.

1859 Tapson, Alfred Joseph, M.B. Lond., 35, Gloucester gardens, Westbourne terrace, W. *Council,* 1862-64.

1863 Tapson, Joseph Alfred, Surgeon to the Clapham General Dispensary; 83, High street, Clapham, S.W.

1862 Tasker, Richard Thomas, Melbourne, near Derby.

1859 Tayloe, Edward, South lodge, Clapham common, S.W.

1859 Taylor, Charles, M.D., Pine house, Camberwell green, S.E. *Council,* 1869.

1859 Taylor, David, 180, Kennington park road, S.E.

1862 Taylor, Thomas, F.R.C.S., 19, Bennett's Hill, Birmingham.

1862 Thane, George Dancer, M.D., 15, Montague street, Russell square, W.C.

1866 Thomas, Jabez, L.R.C.P. Ed., Physician to the Swansea Infirmary; Northampton villa, Swansea, South Wales.

1866 Thompson, John, M.D., Bideford, Devon.

1867 Thompson, Joseph, Jun., 1, Oxford street, Nottingham.

1869 Thompson, R. D., M.R.C.S., Officiating Civil Surgeon, Chingleput.

1867 Thorburn, John, M.D., Lecturer on Midwifery, Manchester Royal School of Medicine; 333, Brighton place, Oxford street, Manchester.

Elected

1867 Thorman, Thomas, 17, Oxford terrace, Hyde park, W.

1860 Thorne, George Leworthy, M.D., Swanage, Dorset.

1862 Thornton, William Henry, M.D., Springfield terrace, Dewsbury, Yorkshire.

1867 Thornton, William Henry, Surgeon to the Royal National Sea Bathing Infirmary; Berkeley Lodge, Margate.

1866 Thorp, Disney, L.R.C.P. Ed., Maldon, Essex.

1860 Tiffen, Robert, M.D., Wigton, Cumberland.

1866 Tilley, Samuel, 70, Union road, Rotherhithe, S.E.

1859 Tilt, Edward John, M.D., Consulting Physician to the Farringdon General Dispensary; 60, Grosvenor street, W. *Council*, 1867-68. *Vice-Pres.* 1869.

1859 Times, Henry G., 23, Manchester street, Manchester square, W.

1869 Tomkins, Charles P., L.K. & Q.C.P. Ireland, Beddington park, Croydon.

1862 Tracy, Richard T., M.D., Physician to the Lying-in Hospital, Melbourne, Victoria.

1865 Trend, Henry Gristock, L.R.C.P. Ed., 191, Southgate road, Islington, N.

1859 Tulloch, James Stewart, M.D., Surgeon to the Westbourne Dispensary; 1, Pembridge place, Bayswater, W.

1865 Turner, John Sidney, Surgeon to the Anerley Dispensary, Woodside, Anerley road, Upper Norwood, Surrey.

1861 Tweed, John James, Jun., F.R.C.S., 14, Upper Brook street, W.

1860 Varenne, Ezekiel G., Kelvedon, Essex.

1860 Vincent, Patrick, Wells-next-Sea, Norfolk.

1862 Vine, George John, M.D., 3, Henrietta street, Covent Garden, W.C.

1866 Vipan, William Henry, Uxbridge.

1864 Wahltuch, Adolphe, M.D., 280, Oxford street, Manchester.

1860 Wales, Thomas Garneys, Jun., Downham Market, Norfolk.

1863 Walker, Thomas Houghton, M.D., Encombe House, 15, London street, Reading, Berks.

Elected

1866 Walker, Thomas James, M.D,, Surgeon to the General Infirmary, Peterborough; 18, Westgate, Peterborough.

1860 Walker, William Henry, L.R.C.P. Ed., Aldborough, near Darlington, Yorkshire.

1860 Waller, John Turpin, Flegg Burgh, Norfolk.

1867 Walters, James Hopkins, Faringdon, Berks.

1859 Wane, Daniel, M.D., 20, Grafton street, Bond street, W.

1860 Ward, John, Penistone, Sheffield, Yorkshire.

1859 Warden, Charles, M.D., Hon. Surgeon to the Birmingham Lying-in Hospital; 39, Temple street, Birmingham.

1862 Watkins, Charles Stewart, 11, Chandos street, Strand, W.C.

1867 Watson, Wasdale, Park square, Newport, Monmouthshire.

1861 Watts, George Henry, Thatcham, near Newbury, Berks.

1867 Webb, Fred. E., 113, Maida vale, W.

1859 Webb, Henry Speakman, Welwyn, Herts.

1860 Welchman, Charles Edward Elliot, Bore street, Lichfield, Staffordshire.

1867 Weller, George, Forest lodge, Wanstead.

1859 Wells, T. Spencer, F.R.C.S., Surgeon in Ordinary to H.M.'s Household; Surgeon to the Samaritan Free Hospital for Women and Children; 3, Upper Grosvenor street, W. *Council*, 1859. *Vice-Pres.* 1868-69.

1859 West, Robert Uvedale, M.D., Alford, Lincolnshire. *Council*, 1859. *Vice.Pres.* 1860-62.

1859 Westmacott, John Guise, M.D., Medical Officer to the Paddington Provident Dispensary; 19, St. Mary's terrace, Paddington, W.

1860 Wheeler, Daniel, Chelmsford, Essex.

1860 White, Frederick George, L.R.C.P. Ed., Castle House, Chepstow, Monmouthshire.

1859 Whitehead, James, M.D., Physician to the Manchester Clinical Hospital; 87, Mosley street, Manchester. *Council*, 1859-61. *Vice-Pres.* 1868-69.

1865 Whitehead, Walter, F.R.C.S. Ed., 234, Oxford road, Manchester.

Elected

1864 WHITMARSH, WILLIAM MICHAEL, M.D., Surgeon to the Hounslow Lying-in Charity; Thanet House, Hounslow, Middlesex.

1867 WILBE, RICHARD HAYDOCK, M.D., York lodge, 21, Finchley road, St. John's Wood, N.W.

1866 WILKINS, JOHN, M.B. Lond., Williams' Town, Victoria.

1861 WILLIAMS, ARTHUR WYNN, M.D., Physician to the Samaritan Free Hospital; Physician-accoucheur to the Western General Dispensary; 1, Montagu square, W.

1861 WILLIAMS, DAVID JOHN, M.D., Queenscliff, Geelong, Victoria, Australia. *Hon. Loc. Sec.* [*Per* J. W. Voss, Esq., Swansea Iron Works, Swansea.]

1864 WILLIAMS, EDWARD, M.D., Holt-street House, Wrexham.

1867 WILLIAMS, EVAN, Bryngwrau, near Holyhead, North Wales.

1867 WILLIAMS, HENRY LLEWELLYN, M.D., 9, Leonard place, Kensington, W.

1860 WILLIAMS, ROBERT HANKINSON, L.R.C.P. Ed., Great Eccleston, near Garstang, Lancashire.

1867 WILLOUGHBY, EDWARD F., 2, Marquess road, Canonbury, N.

1860 WILLS, JOHN, M.D., St. Helier's, Jersey.

1859 WILSON, JAMES GEORGE, M.D., Professor of Midwifery in the Andersonian University, Glasgow; Physician Accoucheur to the Glasgow Lying-in Hospital and Dispensary; 9, Woodside crescent, Glasgow. *Council*, 1863-64. *Vice-Pres.* 1865-67.

1860 WILSON, ROBERT JAMES, M.R.C.P. Ed., 24, Grand Parade, St. Leonard's-on-Sea, Sussex. *Hon. Loc. Sec.*

1865 WILSON, THOMAS, L.R.C.P. Ed. (exam.), Alton, Hants.

1868 WILTON, JOHN, L.R.C.P. Ed., Chalk Pit House, Sutton, Surrey.

1866 WILTSHIRE, ALFRED, M.D., Medical Department, Privy Council Office, 8, Richmond terrace, Whitehall, S.W.

1866 WINTERBOTTOM, HENRY, Consulting Surgeon to St. Mary's Hospital, Manchester; 56, Bury New road, Strangeways, Manchester.

Elected

1860 Wiseman, William Wood, Springstone House, Ossett, near Wakefield, Yorkshire.

1868 Woakes, Edward, M.D., Luton, Bedfordshire.

1860 Wood, William James, Brightwaltham, Wantage, Berks.

1864 Woodman, William Bathurst, M.D., Stonehouse, Gloucestershire, and the London Hospital.

1859 Worship, J. Lucas, Riverhead, Sevenoaks, Kent.

1866 Yeaman, George, M.D., 91, Sauchiehall street, Glasgow.

1861 Young, William Butler, 5, Castle street, Reading, Berks.

1869 Yule, John S. C., 52, Bolton street, Bury, Lancashire.

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ADVERTISEMENT.

The Society is not as a body responsible for the facts and opinions which are advanced in the following papers and communications read, or for those contained in the abstracts of the discussions which have occurred, at the meetings during the Session.

OBSTETRICAL SOCIETY

OF

LONDON.

SESSION 1868.

ANNUAL GENERAL MEETING, JANUARY 1st, 1868.

Dr. Hall Davis, President, in the Chair.

Present—35 Fellows and 5 visitors.

The following gentlemen were elected Fellows:—Dr. Andrew Brown, London; Dr. Butter, Woolwich; Dr. James, Forest Hill; Dr. March, Rochdale; Dr. Marriott, Leamington; and Dr. Wilton, Sutton.

Dr. Cudahau, Dr. R. W. Batten, and Dr. Horace Bazan were admitted Fellows of the Society.

Dr. J. H. W. Hall, Dr. J. C. Baker, Mr. Charles Fryer, and Mr. Evan Williams, having signed the obligation paper, were also admitted Fellows.

ON FUNIS PRESENTATIONS.

By Henry G. Trend, L.R.C.P. Ed., &c.,
LATE RESIDENT-ACCOUCHEUR TO ST. THOMAS'S HOSPITAL.

In recording cases practitioners occasionally fall into the habit of putting upon record such only as are, from their

rarity or monstrosity, considered to be of peculiar interest. In doing so we are, no doubt, serving the interests of science; but other and more practical subjects, the prompt and efficient treatment of which are of immense importance to our patients and ourselves, are apt to be only lightly glanced at. Funis presentations, as far as my own experience goes, are comparatively rare. From 1847 to 1862 I can only call to mind 7 cases out of nearly 3000 attended. The notes of these I unfortunately cannot find.

In a mixed London practice, where about 250 cases have been annually attended, I have met with 12 cases of funis presentation during the last five years, or not quite 1 per cent. It is somewhat strange that six of these should have come under my notice during the past year. In funis presentations all our efforts are directed towards saving the child. In most cases (excluding those where non-pulsating cord presents) the question to be decided is how to deliver in the quickest manner, without endangering the mother.

There are, perhaps, some cases where restitution of the cord may be successfully attempted, but I have never seen any such. We may deliver by turning or the application of forceps. These two methods are not fitted to all cases alike. In funis cases, complicated with transverse positions of the fœtus, turning alone is admissible. I would turn where the head had not descended into the true pelvis, or had come down but a little way. I should prefer an average pelvis as to size, and a perinæum capacious and sufficiently under the influence of so-called "physiological yielding." In turning we not only oppose a more pliable body to the prolapsed funis—we not only lessen the lateral diameter of the fœtal head—but we gain, what is very important, the means for speedy delivery; the "vis a tergo" is supplemented by the "vis a fronte," viz. the traction power exercised upon the presenting parts.

In this way it is curious to observe how delivery by turning or by forceps means much the same. Compression, traction, and leverage, are all here. There is little danger of rupturing the perinæum by turning.

The cases requiring the use of forceps are those where the head has entered the true pelvis; the advantages of their use are best seen in those cases where the head is low down and the pains are in abeyance.

In many cases the cord is pressed on more and more at each pain, a slow kind of asphyxia at length gives rise to feeble or suspended fœtal movements, and thus the spinal cord, having lost one very important source of peripheral irritation, ceases for a while to put in force those usual reflex movements. With a well-dilated perinæum delivery with the forceps is rapidly effected, without injury to the soft parts of the mother, and even where considerable rigidity has existed I have been able to use them with tolerable facility.

In these cases there is seldom time for long consideration. We must act promptly, or our interference is useless as far as regards the safety of the child. I have found that in many of the cases cough has been the exciting cause of the complication. The following cases have induced me to pen these few remarks.

Case 1.—Mrs. C—, æt. 30. Sixth confinement. Previous ones all natural. For some weeks previous to the commencement of labour she suffered considerably from bronchitis, and the cough was very distressing. When sent for, on examination I found the os dilated to the size of a crown-piece, very yielding, with the membranes unruptured, and evidently a quantity of cord coiled up, so as completely to mask the presentation. The pains were sharp, so, waiting about an hour, I ruptured the membranes, and finding an arm among the coils of cord I turned at once, and was gratified with a living male child. The placenta followed soon after. The cord measured forty-eight inches in length, and there was a large quantity of liquor amnii.

Case 2.—Mrs. B—, æt. 31. Fourth confinement. Previous ones natural. In this case also there was violent coughing for some weeks prior to the commencement of

labour. On being sent for, the membranes were ruptured, and several inches of cord were protruding through the vagina. There was very slight pulsation. The os being well dilated, I immediately turned, but the child was still-born. It was above the average size.

Case 3.—Mrs. L—, æt. 27. Third confinement. Previous ones natural. On arrival a large quantity of cord protruded through the vagina. There was no pulsation. The head was coming through the os externum, and labour was completed in about fifteen minutes. The child, moderately sized, was, of course, still-born. In this case a further hitch occurred—the placenta was adherent, running up from the anterior lip; I introduced my hand and removed it without much difficulty.

Case 4.—Mrs. J—, æt. 33. Third confinement. In this case the labour was apparently progressing favorably, with the head presenting. The os being fully dilated, I ruptured the membranes, when, to my disgust, a quantity of cord rushed down before the head. There was no chance of returning it. As the head was well down, I sent for my forceps, and delivered at once, but the child was still-born.

Case 5.—Mrs. F—, æt. 35. Eighth confinement. This patient I attended eighteen months previously with an arm presentation. She has only had one natural labour. On arrival a quantity of cord was protruding, but it was pulsating strongly. The head was low down, but there were no pains. I sent for the forceps immediately, and was gratified by a living child.

Case 6.—Mrs. W—, æt. 29. Fourth confinement. I was attending this lady with a severe attack of bronchitis, and I have no doubt but that the severity of the cough ruptured the membranes at the eighth month, and brought on labour. The os, on examination, was dilated to the size of a crown-piece, and nothing could be felt but cord. I waited

patiently for some time, and at length, finding a foot, I delivered as rapidly as possible, and was rewarded by a living child.

Case 7.—Mrs. F—, æt. 36. Sixth confinement. On examination a long loop of cord protruding through the vagina; os well dilated; the head high up; no pains. Version. A live child.

Case 8.—Mrs. W—, æt. 23. First confinement. When first called the os was dilated to the size of a florin, the membranes were ruptured, and a long loop of cord lay pulsating in the vagina. After waiting some hours, though the head was still above the brim, I put on the forceps and delivered in twenty-five minutes, but the child, a large one, was still-born. This lady afterwards had severe hysteritis, and Dr. Barnes saw her with me.

Case 9.—Mrs. L—, æt. 26. Second confinement. On arrival the os was about three parts dilated; a quantity of cord and an arm were found presenting. Version, but the child was still-born.

Case 10.—Mrs. W—, æt. 24. First confinement. A long loop of pulseless cord protruding, and an arm. The os being fully dilated, the child evidently dead, and the pains severe, I decided upon leaving it alone, and delivery was completed in half an hour by spontaneous expulsion. The child was syphilitic, and had evidently died in utero.

Case 11.—Mrs. J—, æt. 40. Eighth confinement. In this case everything was favorable; a loop of strongly pulsating chord, the os fully dilated, plenty of room, and no pains. Version succeeded in giving a live child.

Case 12.—Mrs. M—, æt. 22. First confinement. Arm complicating. Version. Live child. This case was especially gratifying, turning having been by no means easy.

Remarks.—What has struck me most in considering these cases has been the frequency of the arm complication. I can see no reason why it should be so, and presume that it is purely accidental. That so large a proportion of the children, five out of the twelve, should have been born alive, I attribute to the peculiarly favorable character of some of the attendant circumstances. They were cases where one either turned or put on the forceps as a matter of course. There was, at least in my own mind, no doubt about the propriety of the treatment. That so large a number of cases of this kind should have come under my notice during the year just passed is also remarkable.

A CASE OF TRANSPOSITION OF THE GREATER PART OF THE ABDOMINAL VISCERA INTO THE LEFT CAVITY OF THE THORAX.

By Henry W. Bailey, F.R.C.S. Eng.,
HON. FEL. OF OBSTETRICAL SOCIETY.

Mary Smith, a young healthy woman, æt. 18, was taken in labour October 16th, 1820, with her first child. She had a very good natural labour, which terminated in three hours, and gave birth to a fine and healthy looking girl. As soon as it was born it cried very strongly for a few minutes and then ceased. No particular attention was paid to the infant until after the expulsion of the placenta, which took place in about ten minutes from the birth of the child. I then examined the child for the purpose of ascertaining the security of the funis. To my surprise the child was breathless, lips and round the mouth livid, and every indication of death. Placing my fingers upon the region of the heart I could feel no pulsation whatever, but in the wrists and groins a very evident pulsation was felt. I immediately inflated the lungs, endeavouring to produce artificial respiration; administered stimulants, and put the child into a warm

bath. In a few minutes attempts were made to respire, by a sudden inspiration or sob, and in a little time they became more frequent until full respiration was established. The child again cried as strongly as before, and continued doing so for some few minutes. Its cries, however, became feeble, the heart could not be felt to pulsate, the arteries at the wrist were feeble, and in ten minutes the child again ceased to breathe. Such a case excited my serious attention, and upon more minute examination I discovered an indistinct pulsation under the right breast, very near the axilla. I was convinced this was the heart. The same means were again tried, and with the same success. The child cried some minutes, and then gradually died again, if I may use such an expression. All hopes of an ultimate restoration were lost, although I repeatedly pursued the same means with the same result. In this way I was engaged nearly three hours, when all further attempts were given up.

The following day I had permission to inspect the body. No discoloration had taken place, and nothing externally could be observed, excepting an unusual flatness of the abdomen. Upon exposing the abdominal cavity the first thing presenting itself was the liver drawn to the left side, occupying the situation of the stomach; no small or large intestines could be found except the rectum and part of the colon, both of which were drawn upwards towards the diaphragm. The kidneys were in their natural situation. The bladder contained no water, but it partook of the extension upwards towards the diaphragm, with the contiguous parts. Examining more minutely the situation of the liver, I carried my finger round it; found a considerable aperture, the size of a five-shilling-piece, or two inches in diameter, on the left side of the œsophagus, about two inches from it. The œsophagus had descended through its natural aperture, and immediately bent and ascended through the larger one with the stomach and other viscera. The small lobe of the liver had also made its way through. Having thus explored the abdominal cavity, my attention was then directed to the thorax. After having exposed in the usual way both cavities, a most

beautiful display of small intestines, contracted and white (which appearance has been fully described by Dr. Abercromby in the 'Edinburgh Journal'), and quite empty, resembling in some degree the convolutions of the brain.

The mediastinum was pushed to the right side, occupying rather more than two thirds of that cavity, lifting up the intestines; the heart, enveloped in its pericardium, was pushed also to the right side, and placed between the right nipple and the axilla. It was smaller than natural, and much flattened. The situation of the abdominal viscera in the thorax was then traced. The small lobe of the liver rested upon the diaphragm; immediately behind it the stomach with the cardiac extremity bent down, descending through the aperture. The pancreas and spleen at the posterior part of the chest, and the intestines occupying the superior part. The lungs on the left side were at the superior part, one about the size of a walnut, the other about half the size. They looked healthy, and of a pinky colour; when put into water floated, and had the crepitous feel peculiar to inflated lungs. The lungs in the right cavity appeared much too large for the space they occupied; they were healthy in appearance, and distended by air. Examining the aperture through which the viscera passed, it was observed midway between the natural one through which the œsophagus descends and the side of the chest. It was bound by very white and tendinous fibres, firm and unyielding, similar in touch to Gimbernat's ligament. The internal structure of the heart was examined, and nothing unusual, seen except that the foramen ovale was very large.

The examination of this case was one of a highly interesting kind, and curious with respect to the functions of life.

We are at a loss to account for such a malposition of parts. Whether such took place at the original formation of the fœtus must be conjectural; I feel inclined to suppose it did. I have lately been led to think so from frequent examinations of abortions from a very early period. In one very recently examined I found the head very perfectly formed; the occiput was transparent, and the spinal marrow seen descending from

it, down which a red line extended, giving off minute branches; an attempt was made in the formation of the upper and lower extremities, which looked like small processes about $\frac{1}{10}$th of an inch in length. The eyes, nose, and mouth, were distinctly visible, but the liver and intestines appeared to be floating externally, and merely suspended from the diaphragm. In others which I have examined the same appearances have been observed. This fœtus was about three quarters of an inch in length, and when expelled was seen through the membranes floating in the liquor amnii.

ON A CASE OF UMBILICAL HERNIA.

By Joseph Thompson, Junr., L.R.C.P. Lond., &c.

The following short history will, I think, be found interesting, not only on account of the hernia being found to exist at the time of birth, but also in consequence of its large size and the large quantity of intestine found within it.

Mrs. G— was delivered on October 23rd, 1867, of a full-grown male child after a lingering but straightforward labour. There was nothing remarkable about her pregnancy, except that at the sixth month she was seized with pains "like labour-pains," and "her water broke." The pains went off, however, and she was not delivered till her full time. There was no known cause for this accident.

The subject of this account was brought to me the day after its birth in consequence of a "tumour on the navel string." On examination a swelling is found situated over the seat of the navel, and at the upper and anterior part of it was a portion of the cord, which had been secured in the usual manner. The swelling is soft, contained a small amount of fluid, expands when the child cries or strains; is evidently a dilatation of the structures of the cord, containing a little

fluid and intestine. The swelling is about the size of a small orange; its external covering is composed of a thin membranous-looking structure, in which small vessels may be seen ramifying. The intestines could not be returned into the abdomen. On the morning of October 25th, the child was again seen; it had had a slight movement of the bowels, and soon afterwards the "tumour burst;" a quantity of fluid escaped, and a large portion of intestine of a bright red colour are lying quite loose out of the abdominal cavity.

October 26th.—Has taken no food whatever; vomits frequently; seems to be in great pain, and is continually crying. Ordered a mixture with sal-volatile, tincture of opium, and caraway-water, every four hours.

27th.—Has not been so troublesome; has vomited occasionally, but has not appeared to be in so much pain since taking the mixture. Child is now exceedingly emaciated; takes no food.

1 p.m.—Has just died.

I should have stated that the child made water frequently; bowels acted on one occasion only.

Post-mortem.—On examination there is found to be an opening of the size of a shilling opposite the navel; the bowels are adherent to the edges of this opening, and lymph is effused between the coils of intestine. The "tumour" consists evidently of a dilatation of the structures composing the cord, and contains, with the exception of the duodenum, the whole of the small intestines and the ascending colon. All the other parts of the body are in their normal condition.

Annual Meeting.

The Report of the Auditors for the year ending December 31st, 1867, was read, from which it appeared that the balance in the hands of the Treasurer was £180 11*s.* 10*d.*, and that during the year a sum of £100 had been invested in the funds

in the names of the Trustees of the Society. The balance sheet, read by the Secretary, showed that the Society had received during the year £553 7*s*. by subscriptions from the Fellows, and £81 14*s*. 6*d*. by the sale of the volume of 'Transactions.'

Dr. Westmacott, after congratulating the Society on the highly satisfactory condition of its funds, moved—

"That the report now read be received and adopted."

Dr. Routh seconded the resolution, which was carried unanimously.

The following *Report of the Hon. Librarian* was then read:

"It has been felt that the Fellows of this Society do not receive the advantages from their library which they are entitled to expect. At present the books are kept in a small and inconvenient room, difficult of access, and without any appliances for study and consultation. There have been no arrangements for purchasing new works on obstetrics, and we are entirely dependent on donations for any increase in the number of volumes. Under these circumstances it is not surprising that the library has been almost unused.

The Council have taken these facts into consideration, and it has been determined to make an effort to place the library on a better footing.

For this purpose a suite of excellent rooms have been engaged at No. 291, Regent Street, a central and convenient situation. These will be comfortably furnished, and will combine a library, reading rooms, and museum. All the medical periodicals will be taken in; arrangements for study and letter writing will be made; and all the standard works on obstetrics, both British and Foreign, will be added to the library on publication.

By these means it is hoped that before the next Annual Meeting the Fellows of this Society will possess a library and museum where their comfort and convenience will be well studied. At the present moment we possess 1265 volumes, 99 of which were presented to the Society during the current

year. It may interest the Fellows to know that the valuable collection of instruments obtained by the Society at the late Exhibition will be permanently displayed in the museum attached to the new rooms. It is to be hoped that Fellows inventing new instruments will deposit a specimen in the Society's museum. If this is done we may hope to possess in time a valuable and most useful collection."

(Signed) W. PLAYFAIR, M.D.,
Hon. Librarian.

Dr. Edis then moved the adoption of the following alterations in the Bye-Laws, as suggested by the Council:

In Chapter I, Sect. IV, after the words "Eighteen other Fellows," to add, "and all former Presidents of the Society."

In Chapter II, Sections III, IV, V, VI, to be made Sections IV, V, VI, VII, and the following to be inserted in Section III:

"When there are more Candidates than one for election, the ballot shall first be taken for all together; but if one third of the votes be against such election, the ballot shall then be taken for each Candidate separately."

In Chapter IV to substitute the following for Section II:

"II. Whenever there shall, in the opinion of the Council, appear cause for the removal of a Fellow, notice thereof shall be sent to such Fellow, giving him an opportunity of replying to the Council, either in person or in writing. If the Council are then of opinion that his removal from the Society is desirable, the President shall notify the same at the next Ordinary Meeting, and state the grounds of their opinion. No discussion of the question shall be allowable at that Meeting; but notice shall forthwith be sent to every Fellow of the Society, convening a Special Meeting, for the purpose of considering the proposed removal. If, on a ballot taking place, two thirds of the votes are in favour of the removal, the President shall declare the Fellow in question removed accordingly. At such ballot thirty Fellows, at least, must be present and vote."

In Chapter VII to add—

"Sect. III. Fellows who have held the office of President shall, on their retirement from the Chair, become Honorary Members of Council, having the same privileges as other Members of Council, so long as they remain Fellows of the Society."

Dr. Rayner Batten, of Gloucester, seconded the proposition, which, after some discussion, was carried by a large majority.

A vote of thanks—proposed by Dr. Edis, and seconded by Dr. Taylor—was then given to the President and honorary officers of the Society for their services during the past year, which was acknowledged by the President.

The following gentlemen were then elected officers of the Society for the year 1868:

Honorary President.—Sir Charles Locock, Bart., M.D.

President.—Dr. J. Hall Davis.

Vice-Presidents.—Dr. A. Hall (Brighton), Dr. Graily Hewitt, Dr. Braxton Hicks, Dr. Priestley, Mr. Spencer Wells, and Dr. Whitehead (Manchester).

Treasurer.—Dr. Meadows.

Honorary Secretaries.—Dr. G. C. P. Murray and Dr. Gervis.

Honorary Librarian.—Dr. Playfair.

Honorary Members of Council.—Dr. Tyler Smith, Dr. Oldham, and Dr. Barnes.

Other Members of Council.—Mr. J. M. Burton, Mr. John Clay (Birmingham), Dr. Cory, Dr. Cumberbatch, Dr. Eastlake, Mr. Robert Ellis, Dr. Greenhalgh, Mr. Seymour Haden, Mr. Holman (Reigate), Dr. Leishman (Glasgow), Mr. Napper (Cranley), Mr. Nunn, Mr. Oldham (Brighton), Dr. Pollock, Dr. Roberts (Manchester), Mr. Scott, Mr. Squire, and Dr. Tilt.

The President then delivered the Annual Address.

ANNUAL ADDRESS.

By John Hall Davis, M.D.,

FELLOW OF THE ROYAL COLLEGE OF PHYSICIANS, LONDON; OBSTETRIC PHYSICIAN AND LECTURER ON MIDWIFERY AND DISEASES OF WOMEN AND CHILDREN AT THE MIDDLESEX HOSPITAL; PHYSICIAN TO THE ROYAL MATERNITY CHARITY.

Gentlemen,—At the commencement of a new year in the proceedings of every Society it is the duty of the President to report to the Fellows upon its condition, progress, and prospects; and it is not my intention to depart from so good a custom, more especially as in the case of this, the Obstetrical Society of London, although not of many years' growth, its Fellows have ample grounds for congratulation, and for encouragement to renewed exertions to promote its continued prosperity. Our progress up to this, the commencement of the tenth year of our history, has been indeed one of a success not surpassed, if equalled, our age being considered, in the annals of any other society.

In the eight volumes of our 'Transactions,' and in the ninth volume, which will shortly be placed in your hands, abundant evidence is furnished of the great value of this Society in collecting from an extensive field of observation, and diffusing it far and wide over the profession, practical experience of great value.

The institution of this Society, and its satisfactory working, have been the means of associating together a large number of our professional brethren in a fellowship having for its special object to improve, and to extend with more rapid advances than heretofore, the science and practice of obstetric medicine in its fullest sense. Previous to the establishment of this Society, how vast was the amount of practical knowledge in the possession individually of a host of intelligent practitioners, left unutilised, so far as the general good of the profession and the welfare of the community at large were concerned! This waste of experience was due to the want of those opportunities which, through the agency of

their obstetrical societies, had been long enjoyed by our brethren in other parts of the British dominions and in the chief cities of Continental Europe. Thanks, however, to the founders of this Society, and to those who had given their active and hearty co-operation in its foundation, that great defect in our medical system, which our department had so long suffered from, has now been most successfully remedied, and thus a most signal service has been rendered to the profession and to society generally.

One object of an Obstetrical Society should be to use its best efforts to enlarge the opportunities of education in that department of knowledge among those who are training in our medical schools for the practice of their profession. It was only fair to admit that much has been done of late years by our hospitals, schools, and by the examining boards to improve medical education in its relation to obstetrics; but it must also be conceded that even now too small a proportion of time and opportunities is given to the study of obstetric practice, more especially when we consider how important a part that branch of medical practice plays in the professional pursuits of the general practitioner, and when we reflect how sudden and urgent often are the calls upon his judgment, his skill, and self-possession; and how sad the results are, if he is not possessed of the knowledge which would enable him to rescue his patient from her state of peril. I am sure many examples in illustration from practice will suggest themselves to you; but we may take, as an instance, a case of pregnancy complicated by placenta prævia and its attendant floodings. Not many weeks ago such an example was immediately brought under my notice. A succession of floodings had been permitted before proper aid was sought. Delivery was gradually but with facility effected by version, and the hæmorrhage thus permanently arrested; but so great was the patient's prostration from the profuse hæmorrhage she had had already to bear, that the utmost that could be expected in the case was a slow recovery, leaving the patient, if she ever should regain her former health, much enfeebled, and predisposed to ailments for a

long period. In less urgent cases much unnecessary illness and protracted suffering have ensued from an absence of adequate clinical knowledge. In consequence of this, the true features and necessities of the patient's case have not been recognised; and the appropriate treatment has not, therefore, suggested itself to the mind of the practitioner. It is true that now for some few years the English College of Surgeons has instituted a special diploma in midwifery and its allied subjects for voluntary candidates; but, since only comparatively few volunteers for that distinction offer themselves, the desired object of encouraging a diligent study of obstetric science and practice is very inadequately fulfilled. The required remedy is, so to arrange the student's time, uninterfered with by other clinical work, as to enable him to qualify himself by such clinical opportunities as hospitals should afford. Then I would suggest that all candidates for the diploma of the College of Surgeons of England should be examined as to their practical knowledge of Obstetrics, in the same way as candidates have to undergo that ordeal at the University of London and the English College of Physicians; but, should any candidate wish for especial distinction in that branch of practice, he might be permitted to submit himself to a higher examination for honours. By such a course only could the obstetric practitioner be indeed properly qualified for those trying and responsible duties which he will have to undertake, often single-handed, when he enters upon the practice of his profession.

Other objects there are in which our Society may be usefully engaged; namely, through the action of committees, in the collection of information from the profession on certain important points of obstetric interest, requiring a fuller experience and elucidation. Such a one is the important question of the cause of the great mortality among young infants, humanely suggested to our Society by Dr. Farr, of the Registrar-General's Department; and a committee on the subject is being formed for that inquiry by the Council of our Society.

I am glad to inform you that our numbers at the present date

(January 1st, 1866) are 588; *i.e.* 27 in excess of our numbers in the previous year, and that 61 new Fellows have joined us during 1867. Our Treasurer's report is very satisfactory. Thus, you see that, after satisfying all claims due at the end of 1867, our balance in hand is £180, as against £90, our balance in 1866. Our property in consols represents £1118, of which £100 was invested during the last year, as against £50 in 1866. The sale of our 'Transactions' beyond the limits of our Society have yielded £81, against £51 in 1866.

Our new Library and Reading-Room, I am glad to state, will soon be ready for the use of the Fellows at 291, Regent Street. For so early an occupation, and the comfortable arrangements provided, we are chiefly indebted to the active interest shown by Dr. Playfair, our Honorary Librarian. The weekly medical periodicals and quarterlies, and the principal foreign journals, will be placed on the table for the use of readers. Ample accommodation will be made for the reception and display of obstetric instruments belonging to the Society, and for certain pathological specimens. Having now an established home for our books and other property, we shall expect to receive further donations; indeed, two handsome donations towards our Library are already promised. It is, moreover, proposed to make purchases of the best modern works in obstetricy not already in our possession.

The painful duty now remains to me of recording the deaths of those Fellows who, at the beginning of the year, were still associated with us. We have to lament the loss of six Fellows by death during the past year. Their names are as follows. Mr. James Reeves Traer died in Paris last April, aged 37. He was superintendent of Class 17, and obtained honorable mention for the excellence of his photographs of microscopic objects at the International Exhibition of 1862. He wrote a paper, "Sur l'Arrangement des Veines de l'Ovaire," published in the 'Bulletins de la Société Anatomique.' At the time of his decease he had held for a short period the office of Honorary Librarian to our Society. Dr. Howell Charles Phillips, Mr. George Robins, Mr. Joseph Ward, Mr. John Loane, and Mr. Samuel Smith of Leeds,

were other Fellows who had died during the year. Mr. Samuel Smith died in November last, at the age of 77. He was, while a student, a private pupil of Sir Charles Bell; but he had also studied at Leeds and in Edinburgh. At the time of his death he was senior of the three consulting surgeons at the Leeds General Infirmary, having been an active member of the staff, with honour to himself and advantage to the institution from the year 1819. He was also Surgeon to the Hospital for Women and Children at Leeds, and Lecturer on Surgery and Midwifery at the Leeds School of Medicine. We are informed, by a memoir of him which appeared in a medical journal from the pen of an old colleague, that he was greatly esteemed by his professional brethren in Leeds and its neighbourhood, and that those who wished to profit by his skill and large experience in consultation, felt assured that their professional interests and reputation were perfectly safe in his hands. I have to add, that Mr. Smith was formerly on the Council of this Society, and at the time of his death was honorary local secretary for Leeds.

My next desire, gentlemen, is to return you my best thanks for your earnest and well-directed endeavours to promote the welfare and usefulness of this Society; and to the honorary secretaries our cordial acknowledgments are also most undoubtedly due for their indefatigable and valuable services during the year. And now, in conclusion, let me venture to hope, as we have indeed reasonable grounds to expect, that our Society will be the means of knitting together, and firmly, the bonds of good fellowship amongst us, and, when our work is finished, amongst our successors for all time. That, in its abundant and valuable fruits, our Society will ever, in pursuance of its high object, continue to prosper for the good of those tender beings who have the strongest claim upon our sympathy, whose safety it should ever be our anxious care, if not our sacred duty, to watch over, help, and comfort, in their peculiar bodily afflictions and sufferings.

Mr. John Scott proposed a vote of thanks to the President for his valuable address; Mr. Mitchell seconded the proposition, which was carried by acclamation.

FEBRUARY 5TH, 1868.

Dr. HALL DAVIS, President, in the Chair

Present—65 Fellows and 6 visitors.

Dr. MATTHEWS DUNCAN presented a handsomely bound copy of his work, "Researches in Obstetrics," dedicated to the Society, for which a special vote of thanks was passed.

The following gentlemen were admitted as Fellows of the Society:—Dr. Andrew Brown; Dr. W. Harris Butler; Dr. F. E. Junker, and Mr. C. A. Robinson; *having forwarded the obligation paper duly signed*, Dr. Alfred James, Forest Hill; Dr. Colley March, of Rochdale; Dr. John Wilton, Sutton, Surrey.

The following gentlemen were elected Fellows of the Society:—Mr. Fred. T. Coates, Mr. Geoffrey Veel Cooper, and Mr. John Jones.

Mr. SPENCER WELLS exhibited a multilocular cyst of the left ovary which he had removed on the day of the meeting, having removed the right ovary of the patient more than six years ago. When the first operation was performed the patient was 50 years of age, and had been tapped twelve times. A very large adherent cyst was removed from the right side, and a thin single cyst as large as an orange within the folds of the left broad ligament was simply laid open, the ovary being small. The patient recovered perfectly good health, and acted as cook in a large family till last summer, when the abdomen began to increase in size. She came into hospital in November, when seven pints of ovarian fluid were removed by tapping, and a uterine polypus, which had caused hæmorhage, was cut off. She went to the country, returned in better health, and then Mr. Wells

removed the left ovary. There were some omental and intestinal adhesions, and so broad a connection close to the uterus that neither clamp nor cautery could be used. Mr. Wells, therefore, cut the cyst away, tying each vessel as it was divided, cutting off the ends of the ligatures short. The patient seemed very likely to go on well.

Dr. Brunton exhibited a placenta showing fibrinous deposits.

Dr. Wiltshire exhibited a new utero-vaginal douche, which by an adaptation of Dr. Richardson's now well-known india-rubber balls, affords a steady and continuous current.

The instrument is made entirely of india rubber and vulcanite; the valve being ingeniously constructed by Mr. Mayer, of the firm of Mayer and Meltzer, Great Portland Street, entirely of the latter material, so that strong acid or other medicated solutions may be used without fear of injuring it. Thus solutions of perchloride or sulphate of iron, chloride of zinc, sulphurous acid, iodine, bromine, nitrate of silver, &c., are readily applicable by means of this apparatus. The ball which is compressed by the hand is made of thick rubber so that it may rapidly expand; and that portion of the tube which is placed in the reservoir is of large calibre, so as to allow of the easy ingress of the fluid to be used. The nozzle of the apparatus is so constructed that several different tubes and a rose, all of which have been recently devised by Dr. Wiltshire, may be applied to suit the special requirements of a case.

Thus, there is a small rose which affords an efficient shower, and will be found useful for many cases, *e. g.* to apply iced water or an astringent solution to a bleeding stump. Then there is a long tube which enables the operator to direct a strong jet of water against any surface. Besides these there are the following tubes; a long and very flexible catheter for the bladder, sinuses, or the nose; a tube for washing away tenacious mucus from the interior of the cervix uteri, or for injecting the uterus, and the usual vaginal and rectal tubes;

the former being constructed in a manner which it is hoped will add materially to its efficiency.

The instrument then, with these new appliances, will be useful for various purposes which will be obvious to those who examine it. Lastly it forms an excellent enema apparatus.

ON CARDIAC APNŒA AFTER DELIVERY.

By W. S. Playfair, M.D., M.R.C.P.,
ASSISTANT OBSTETRIC PHYSICIAN TO KING'S COLLEGE HOSPITAL.

In a paper published in the 'Lancet'[1] during the autumn of this year on "Thrombosis and Embolism of the Pulmonary Artery as a Cause of Death during the Puerperal State," I ventured to hazard the suggestion that certain anomalous cases occasionally occurring after delivery, characterised by all the phenomena usually ascribed to embolism, but in which the patient eventually made a complete recovery, might really depend on the presence of a coagulum in the right side of the heart and pulmonary arteries.

The possibility of such a condition existing without proving fatal had not previously been suggested, so far as I am aware, by any writer on the subject.

Dr. Meigs, indeed, to whom we are indebted for first directing the attention of the profession to coagulation of the blood on the right side of the heart as a cause of death, has a passage which seems to show that he recognised the possibility of such an occurrence. He says, "Should an instance occur so threatening as to lead to the greatest apprehension of a fatal result, it may still be possible by wise precautions to indulge in the hopes of a recovery; which will depend on the size of the clot formed during the fainting. A clot that should quite fill the whole cavities must preclude the possibility of any recovery; whereas a smaller one would not prevent the blood of the cavæ from entering it, but with

[1] 'Lancet,' July 20th and 27th, and August 10th, 1867.

difficulty and imperfection depending on the size of the clot." [1]

He does not, however, say that he had seen any case tending to support this statement, which was probably entirely theoretical.

In the paper alluded to I have related three cases which, I believe, can be explained on no other hypothesis.

Since that time the following very remarkable example of the same condition has come under my observation, and I venture to bring it before the Society, not only on account of its own intrinsic interest, but because, if the explanation I propose be correct, it will tend to throw some light on a class of cases which must have been hitherto misinterpreted.

On the 4th September, 1867, I was requested to see a patient in consultation with Mr. C. A. Prater, of Woolwich. She was a delicate-looking young woman, twenty-four years of age, who had previously been under my care for some uterine derangement.

She had been confined of her first child on the 20th August, after a natural and easy labour, unaccompanied by hæmorrhage. Thirty hours after delivery she complained of a feeling of great weakness, for which no cause could be assigned. On the morning of the third day she had a sudden fright, which was followed by a severe attack of syncope. When she rallied she complained of a sense of oppression at the chest, and had the greatest difficulty in breathing. This was described as having been somewhat alleviated under treatment, until the ninth day after delivery, when, after walking to her couch, the symptoms came back with increased vigour, and have continued unabated ever since.

When I visited her I found her sitting on a sofa, propped up with pillows, as she said she could not breathe in the recumbent position. The least excitement or talking brought on the most aggravated dyspnœa, which was so bad as to threaten almost instant death. Her sufferings during these paroxysms were terrible to witness. She panted and struggled for breath, and her chest heaved with short gasping respira-

[1] Meigs' 'System of Obstetrics,' p. 354, ed. 1867.

tions. She could not even bear any one to stand in front of her, waving them away with her hand, and calling for more air.

During the attacks the pulse grew very small and feeble,—about 130 in the minute, and the face became deadly pale. The respirations in the intervals were about forty to the minute.

These attacks were very frequent, and were brought on by the most trivial causes. She talked in a low suppressed voice as if she could not spare breath for articulation. On auscultation, air was found to enter the lungs freely in every direction, both in front and behind. Percussion was clear and resonant. There was no *râle* or abnormal sound of any kind. Immediately over the site of the pulmonary arteries there was a distinct, harsh, rasping murmur, confined to a very limited space, and not propagated either upwards or downwards. The heart sounds were feeble and tumultuous.

These symptoms led me to diagnose the presence of a coagulum in the right side of the heart and pulmonary artery. The prognosis was, of course, most unfavorable. In none of the other cases which I had reported was the dyspnœa so aggravated, and every recurring paroxysm seemed as if it were to be followed by instant dissolution. I recommended the most perfect rest, and absence of excitement of every kind, together with a free administration of nourishment and stimulants, to which was added a mixture containing sesquicarbonate of ammonia and chloric ether.

To my surprise and pleasure, on the 29th September Mr. Prater reported as follows:—

"For some days after you saw Mrs. H— she had great dyspnœa, faintness, and coldness of the extremities, the left hand being much colder than the right. She could not utter more than two or three words at a time, and every now and then fits of extreme restlessness came on. She had no sleep, and could not bear the recumbent posture for a moment. I followed out your line of treatment, giving her brandy, beef tea, chloric ether, &c., in large quantities. The heart tumbled about very much; the sounds became very faint, and I could not distinguish between them. This state of

things lasted about a week; then she began to improve, became warmer at the extremities, left hand as warm as the right, lips not so blue, but the sounds of the heart were very faint, and I could only make out one sound. She has improved steadily up to a week ago, when she lost her child, which threw her back a little, but she seems now to be doing well, can walk a little, and eats and drinks heartily. The heart is now quieter, pulse about 90. The sounds are more audible, the first distinct, the second only heard faintly. The breathing is quiet, the lips a good colour, and the skin warm, and, in short, she seems to be in a fair way to recovery."

I again saw Mrs. H— on October 14th, nearly six weeks after my first visit. She was still very weak, and was suffering from somewhat severe dyspepsia, chiefly sickness, but the former chest symptoms had entirely disappeared. The heart sounds were regular and distinct, and the harsh rasping murmur was no longer audible. The breathing was perfectly natural and quiet, and she could lie in any posture.

The symptoms in this case were precisely those which have been so accurately described by Dr. Richardson, in his 'Clinical Essays,' under the name of cardiac apnœa.[1]

That the cause of the dyspnœa was not situated in the lungs was evident from the fact that air traversed them freely in every direction. The history of the case sufficiently proves that the attack was not due to any old-standing heart disease, and that it was distinctly connected with the puerperal state. The symptoms, moreover, were precisely those which have preceded many fatal cases of pulmonary obstruction, and which have been fully explained after death by the presence of coagula in the right side of the heart and pulmonary arteries. I will venture to say that had any one seen this case during a paroxysm, and had death ensued, in the event of a post-mortem examination not being allowed, he still would not have hesitated a moment as to the cause of the fatal result.

The nature of the proposition I am advancing of itself precludes the possibility of verifying my hypothesis by post-

[1] 'Clinical Essays,' by Benjamin W. Richardson, M.D., p. 224 *et seq.*

mortem examination, but we have at least evidence that life may be prolonged for a considerable time with coagula in the pulmonary arteries.

In a case published by Mr. Paget the patient lived a week after the advent of the symptoms, from which he draws the inference "that, in certain circumstances, a great part of the pulmonary circulation may be arrested in the course of a week (or a few days more or less) without immediate danger to life, or any striking indication of what has happened."[1]

A remarkable example of the kind is also mentioned by Dr. Richardson, who says, "A labouring man, who had been suddenly seized in the night with a sense of suffocation, came before Mr. McNab. After struggling awhile for breath he partially recovered and lived on for weeks, breathing with great difficulty; the only relief he could obtain was by placing himself in one position, viz., by lying with his face downwards and resting on his elbows. In one of his agonising struggles for breath he died; and after death it was found that a fibrinous band, having its hold in the ventricle, extended into the pulmonary artery."[2]

We have only, then, to assume the possibility of a coagulum becoming eventually absorbed to account for the recovery in this and similar instances. And we have abundant ground for such an assumption, for it is well known that coagula in the peripheral venous system are almost invariably absorbed and the circulation in the occluded vessels perfectly restored. Every case of phlegmasia dolens and obstructive phlebitis affords proof of this; and surely what constantly happens in one part of the body may readily enough occur under similar structures in another.

To admit of the animal functions being carried on it is probably essential that the coagulum be very small, so as to allow sufficient blood to pass to the lungs.

It will be observed that in the case quoted by Dr. Richardson, which survived for some weeks, the coagulum is described as being merely "a band of fibrine."

[1] 'Med.-Chir. Trans.,' vol. xxviii, p. 358.

[2] Op. cit., p. 227.

In that case the patient could only obtain relief by resting with his face downwards; in my case, related above, the recumbent posture could not be borne; and in another case which I have recorded[1] the patient could only breathe when lying perfectly flat. These differences are probably explicable by the varying position and form of the coagula.

The importance of absolute and perfect rest in the treatment cannot be over estimated, since almost every fatal case has been the direct result of some bodily exertion, often very trifling; and the only hope of recovery must be in affording every facility to the passage of blood to the lungs until nature has had time to remove the obstruction.

Whether such cases are common I cannot venture to say; certainly they are not described in any of the best known collections of cases. If, however, four have come under my observation in my own comparatively limited experience, the natural inference is that they cannot be very rare.

Doubtless the symptoms have often been overlooked or misinterpreted. Thus, as I write, I observe a case recorded in the 'British Medical Journal,'[2] which seems to me to have been undoubtedly one of the kind under discussion. This is an example of complicated twin labour related by Mr. Edward Thurston. The author in describing the after progress of the case says that, twenty-four hours after delivery, "I was sent for and found her suffering from urgent dyspnœa, with distressing pain in the region of the heart. The next morning the dyspnœa was better, but still she had no sleep. On the following evening the syncope returned. It was then so severe, and of such long duration, and the sensation of approaching dissolution was so great, that I watched for her last breath. To our great surprise next morning our patient was still alive, but had had no sleep." The treatment was by stimulants, &c.; and he then goes on to say, "The dyspnœa returned every night for more than a week; but the attacks became gradually less and less."

[1] 'Lancet,' August 10th, 1867, p. 154.

[2] Case of Complicated Twin Labour, by Edward W. Thurston, Esq., 'British Medical Journal,' October 12th, 1867.

Now, these symptoms are surely very remarkable, and certainly they are in no degree those of shock to which Mr. Thurston attributes them. I believe that they can only be fully explained on the hypothesis I am discussing. It is very possible that similar cases may have occurred in the practice of others, and that their significance has been overlooked. I trust, therefore, that calling attention to the subject may induce others to record their experience on this point.

Note.—It has been suggested to me by a medical friend who has a melancholy interest in the subject, from having lost his own wife from pulmonary embolism after delivery, that a possible explanation of the tendency of the blood to coagulate on the right side of the heart and pulmonary arteries may be that at that point it has reached its maximum of impurity after circulating through the body. Whether this theory will suffice to account for the frequency of pulmonary thrombosis I will not take upon myself to decide, but it seems to be, at any rate, a sufficiently plausible one, and worthy of further investigation.

Mr. Spencer Wells concurred with Dr. Playfair in the belief that cases such as he had described were far from being uncommon. He had published accounts of cases where the formation of clots in the right side of the heart had been watched during life and found after death. In other cases patients had recovered whose symptoms could only be explained by the deposit of fibrine and its subsequent disintegration and removal. Whenever the blood was overcharged with fibrine, the power of the heart enfeebled, and the temperature of the body high, coagulation of blood and deposit of fibrine was to be feared. It was a common cause of death in traumatic peritonitis, and in pyæmic fever and septicæmia after operation or injury. The symptoms were very characteristic in all cases: great oppression about the chest, the patient filling the lungs with air by deep inspirations, and yet wanting breath; the lungs getting plenty of air, but very little blood; rapid feeble action of the heart, and gradual loss of the first sound. In one case, seen recently, Dr. Richardson had pointed out that although the first sound was faintly audible on the left side of the heart, it could not be heard on the right side, while the second sound was distinct on both sides. The treatment by carbonate of ammonia, which acts by keeping the blood fluid, combined with stimulants, was probably the best.

Dr. Graily Hewitt believed, with Dr. Playfair, that coagula in the heart were the cause of the symptoms noticed in most of these distressing cases. Not long since he was called to a case in which, however, he could only attribute the occurrence of the symptoms—severe pain in the cardiac region, distress as regards respiration, and pulselessness—to shock. The case was one in which the removal of an adherent placenta had been attempted, and for upwards of two hours death was every moment expected by himself and the gentleman in attendance. Finally, after administration of much stimulant by mouth as well as by rectum, the patient rallied. The operation on the uterus had, he believed, given rise to shock; and in this instance he did not think coagulation in the heart had occurred.

Dr. Wiltshire asked, firstly, whether there had been any œdema of the body in the case Dr. Playfair had brought forward. It appeared to him that if the thrombus in the pulmonary artery had been of any size, and of more than very brief duration, there would necessarily be more or less œdema. Secondly, if Dr. Playfair could explain how the clot was disposed of, the process must be one of extremely fine molecular disintegration, or the particles would be arrested in the capillaries of the lungs, and grave consequences would ensue. Respecting the theory quoted by Dr. Playfair, that the cause of the coagulation of blood in the pulmonary artery is that it has there attained its maximum impurity, Dr. Wiltshire remarked that he thought that explanation quite inadequate, for it was well known that venous blood was not very coagulable, and suggested that it was more likely due to the admixture of the contents of the thoracic duct, which were of a highly coagulable character, and which, moreover, being poured into the subclavian vein, had mingled with the venous blood just before its entrance into the right side of the heart.

Mr. W. Adams related the case of a lady, aged thirty, who was delivered of a living child on October the 12th, after a natural labour. She continued well until November the 3rd, when she began to experience dyspnœa after any exertion; her pulse ranged above 100, and on the slightest exertion reached 120 per minute. A careful examination of the chest could detect no disease of heart or lung. Perfect rest, a generous diet, and tonics, were prescribed for her, but the symptoms did not improve, and on two occasions after ascending a flight of stairs syncope occurred. On the 23rd of November, after walking slowly upstairs, another attack of syncope occurred which terminated her life. A post-mortem examination showed the heart and lungs, as well as the other organs of the body, to be perfectly healthy, but the pulmonary artery was plugged by a firm fibrinous clot, which from its toughness and firm adhesion to the lining membrane of the vessel must have been days, if not weeks, in formation.

Dr. Protheroe Smith remarked that certain observations he had made on the inferior animals might in some measure illustrate the subject of Dr. Playfair's paper. In prosecuting experiments on transfusion of blood he had been unfortunate enough in his first attempts to inject unwhipped blood into their veins, and kill two sheep; and the symptoms presented by those animals, as well as the post-mortem appearances, were analogous to those characterising the cases to which Dr. Playfair had alluded. Some time after the operation the animals showed great prostration of strength, hurried respiration, and dyspnœa, terminating in death by asphyxia. The post-mortem examination showed in both cases, one of which lasted several days, a firm, dense, light-coloured fibrinous clot, occupying the right ventricle, and projecting for some length into the pulmonary artery.

Dr. Playfair said that, while fully admitting that shock was likely to predispose to this affection, he could not agree with Dr. Hewitt in thinking that some of the cases could be explained by shock alone. In most of them there had been nothing to produce shock; and the symptoms in the two states were entirely different. No one who had seen a case of the kind could fail to have been struck with the terrible struggle for breath which formed the most prominent symptom, while nothing of the kind is observed in true cases of shock. He had not observed any œdema of the limbs.

Dr. Martyn said that he had met with a case bearing upon the subject of the paper; it occurred in an advanced stage of rheumatic fever: there were all the symptoms named by the author, but in a severer form. Dr. Martyn diagnosed the case as one of plugging of the pulmonary arteries at once, and watched the symptoms carefully until the patient died, about two hours from the time of the attack. He noticed two symptoms which he believed Dr. Playfair had not mentioned, namely, coldness of the breath, and a shrunken cold state of the face and extremities; the extremities became somewhat livid, and the appearances were very like those of the collapse of cholera; there were however points of difference. In his case no pulse could be felt at a very early stage of the symptoms, showing that the circulation was completely obstructed in its passage through the lungs, or very nearly so. There was some beating of the carotids or life could not be carried on. Now, these symptoms of coldness of the breath and shrunken state of the surface of the body, he thought, were important as aiding to a conclusion as to the nature of such cases. He begged to ask Dr. Playfair if he had met with these symptoms in his cases. Dr. Martyn had verified his diagnosis in his own case by a post-mortem, and the case had been published in the 'Pathological Transactions.'

TWO CASES OF INVERSION OF THE UTERUS AFTER DELIVERY, WITH REMARKS.

By W. Tyler Smith, M.D.,
FELLOW OF THE ROYAL COLLEGE OF PHYSICIANS; PHYSICIAN-ACCOUCHEUR TO ST. MARY'S HOSPITAL, ETC.

Inversion of the uterus is the rarest, and at the same time one of the most formidable of the serious accidents connected with parturition. In the practice of the Dublin Lying-in-Hospital it occurred only once in upwards of seventy thousand cases, and many consulting accoucheurs of large experience have passed their lives without seeing a case of the kind. I have, therefore, thought it might not be without interest to place on record a brief account of two cases in which I have been concerned.

Case 1.—Dr. Norton, of Bayswater, an experienced accoucheur, summoned me to a patient, who I found, on my arrival, had been delivered two hours previously of a living child. The labour was an ordinary one, and the lady had given birth to several children. Dr. Norton informed me that soon after the child was born, the uterus was suddenly inverted, and appeared externally with the placenta adhering to it. He assured me that he had made no traction of the cord sufficient to have inverted it mechanically. He quickly detached the placenta, and returned the uterus into the vagina, but was unsuccessful in the attempts made to reinvert the organ. Profuse and continued hæmorrhage occurred from the utero-placental surface, and the pain in the organ was described as being very intense, much more so than the pains of labour itself. When I saw the patient she was in a state of collapse, not so much, I believe, from the loss of blood, as the agony she had endured since the accident. On examination, I found the inverted uterus in the vagina, long and flattened in shape, and with the os and cervix in a state of violent spasmodic contraction. This spasm appeared to be the cause of the pain, and was sufficient to render it hopeless to attempt to pass the large

uterus through the narrow ring, which held it above as in a vice. We therefore placed the patient under the influence of chloroform, and I endeavoured, with my right hand, to reduce the uterine tumour. The anæsthesia evidently softened the uterine mass, and somewhat relaxed the rigid os. But on attempting to push the organ upwards in the direction of the axis of the pelvic inlet, I found the tumour passed so readily into the abdomen, under anything like forcible pressure, that there was considerable danger lest the uterus should be torn away from its pelvic attachments. With the left hand, therefore, I prevented the ascent of the uterus, and by a mixture of squeezing and restrained upward pressure, gradually passed the uterus through the os, and thus effected its perfect re-inversion. No noise or snap, such as that usually described in such cases, was heard at the moment the uterus returned to its right position. On recovering consciousness she was free from pain, and no further hæmorrhage occurred. She had a long and tedious convalescence from the shock of the accident, and the anæmia resulting from loss of blood.

Case 2.—I was summoned by my friend Dr. Walter Bryant to assist him in a case of tedious labour from inertia. After consultation, we determined on delivering with the forceps. After chloroforming the patient (a primipara) we delivered her of a living child. As the head was large and the vulva contracted, the perinæum was lacerated to about an inch in extent. While she was still insensible, a few seconds only after the birth of the child, I placed my hand on the lower part of the abdomen to ascertain if the uterus contracted properly. At this time the vulva was uncovered, and a slight amount of hæmorrhage was taking place. While my hand was on the hard and contracted uterus, I felt the rounded mass disappear; it seemed to subside in the pelvis. At the same instant a mass presented at the ostium vagina and was quickly expelled. Our first thought was of twins, but we soon saw that it was the inverted uterus, with the placenta attached, which protruded. I was surprised at the large size of the two organs

as they lay exposed together. It would be, I think, impossible to imagine a better opportunity than we had of witnessing the accident of inversion. Each step of the process was, as it were, under the cognizance of sight and touch. As the patient was becoming sensible, a little more chloroform was administered, the placenta was carefully peeled off, and we found but little difficulty in returning the organ through the os uteri. No time had been allowed for firm contraction of the os upon the extruded organ. As in the former case, no sound was heard at the time of reimposition. Before the patient recovered consciousness we put two or three stitches in the torn perinæum, which healed perfectly in a few days. The patient had herself known nothing, up to this time, of her delivery, or of the accidents and their remedies. She recovered without any bad symptoms, and has since given birth to a second child. As regards the cause of inversion in this case, there could be no question about traction of the cord, as the accident occurred before any thought was given to the removal of the placenta.

As a pendant to these two cases I may mention that the patient whose case I have related in the forty-first volume of the 'Medico-Chirurgical Transactions' has borne several children. In this patient I re-inverted the uterus after it had been inverted upwards of twelve years. The medical man who attended her has informed me that in one of her deliveries the uterus was a second time inverted, but was reduced promptly and without difficulty.

In my work on 'Parturition' and the 'Manual of Obstetrics,' I have endeavoured to elucidate the causes of this accident, comparing it on the one hand to intussusception and inversion of the intestine; and on the other, showing its relations to spasmodic rigidity of the os uteri during labour, to encysted placenta, and to hour-glass contraction. I have endeavoured to demonstrate that inversion of the uterus is often the result of an active and not a passive condition of the organ, and that it is not, as was formerly supposed, attributable in all or even the majority of cases to traction of the cord in attempts to remove the placenta. In the first stage of the act of inver-

sion there is a cup-like depression of the fundus uteri. The presence of the fundus in the middle portion of the uterus leads to contraction similar to hour-glass contraction, and this grasps the fundus and passes it on towards and through the os uteri. After the complete inversion of the organ, the os uteri contracts as in spasmodic rigidity during labour, or in cases of encysted placenta, and prevents the return of the uterus. One of the most recent authors on the subject of inversion, Dr. Matthews Duncan, while agreeing with me in the main, believes that the cup-like depression of the fundus is caused not by spasm or contraction, but by paralysis; and that inversion is the result of mixed paralysis and spasm. Dr. Duncan may possibly be right, but after considering his objections I am inclined to adhere to my opinion. Paralysis, or pure inertia of the uterus, is common enough in cases of post-partum hæmorrhage, and if paralysis of the fundus were the first step in the process, I think the accident of inversion would be more common than it is. I have often had my hand for considerable periods in the uterus, when paralysed so to say, that is, without any sign of contraction, either with or without irritation, and have never noticed any tendency of the fundus to fall into the body of the organ in such cases. The force, too, with which the organ is not only inverted, but expelled beyond the vagina, seems to tell of spasm rather than paralysis even of a partial kind. In the second case now related, my hand was on the uterus at the moment of inversion, and it was certainly firm and contracted at the time. I am still, therefore, disposed to believe, on these grounds, that inversion of the uterus is dependent on an active, but entirely abnormal contraction of the organ, a complete reversal, so to speak, of its ordinary peristaltic action.

But of still more importance than the cause is the treatment of this accident. The point upon which all authors and observers are agreed is, that the attempt to reduce the inversion should be made as quickly as possible. Hours or even minutes of delay greatly increase the difficulty of reduction. It is also evident that we have in chloroform and, probably, in other anæsthetics, the means of making the

reduction comparatively easy by removing the spasm of the os and cervix. I would almost venture to go so far as to assert that with chloroform no case of inversion would be irreducible if treated within a reasonable period after labour. Anæsthesia is of the same value in all the other affections allied to inversion, namely, in spasmodic rigidity of the os during labour, in the spasm of encysted placenta, in hour-glass contraction, and in the most severe forms of after pains.

Dr. Protheroe Smith observed that it had not been his lot to witness inversion of the uterus immediately following labour. In one case, however, in which he had diagnosed chronic inversion of the uterus, another gentleman, believing it to be polypus, had attempted its removal by incision; but although, having discovered his mistake, he did not complete the operation, the patient shortly afterwards died of acute peritonitis. In another case which he had seen, many attempts to reduce the inversion had been made, and thirteen months had elapsed since the occurrence of the inversion at the time he first saw her. He, however, accomplished the reduction by means of a hemisphere of wood on a handle, by which the protruded fundus was compressed; and gradually, by the persistent efforts of Dr. Sanderson, Mr. Scott, and others continued for some hours, the rigid condition of the cervix yielded so as to enable him to effect the complete retrocession of the inverted uterus. In proof of the superiority of this operation over that of Mr. Cross of Norwich, he would further state that the patient had since given birth to two children. On both occasions there was considerable atony of the uterus in the third stage of labour, hæmorrhage; and on the last occasion there was adherent placenta, and so little contractile power that the hand had to be held in the uterus for an hour before contraction ensued and hæmorrhage ceased. Notwithstanding this condition, in neither instance was there any attempt on the part of the uterus to reproduce inversion.

Dr. Priestley regarded Dr. Tyler Smith's paper as very interesting, and a valuable contribution to our knowledge concerning inversion. The author had advanced very good reasons to prove that an irregular and abnormal contraction of the uterus after delivery might produce inversion, and that this might take place spontaneously. Whether this hypothesis were true, or whether they accepted the explanation recently given by Dr. Matthews Duncan, he thought there were good grounds for believing that there were more ways than one by which inversion might be produced, and that besides the spontaneous cases there were others arising from injudicious management on the part of the attendant, or, indeed, produced inadvertently and unavoidably by the skilled obstetrician.

It could very readily be understood how, in certain flaccid conditions of the uterine walls after the expulsion of the child, a very moderate amount of traction on the umbilical cord added to the weight of the placenta yet attached to the fundus might produce inversion. And besides the cases in which the uterus was turned inside out, as it were, by too violent pressure from unskilled hands, he was inclined to believe that in rare instances the most careful obstetrician might inadvertently produce slight indentation in the fundus uteri while exerting compression through the abdominal walls in cases of tardy contraction of the uterus, and where the shape and position of the organ were indistinct. The indentation once produced, the depressed portion would be seized by contracting fibres lower down, and might culminate eventually in complete inversion. It might not be possible in all cases to avoid such an accident, but the recognition of its possibility would suggest the desirability of making compression on a flabby uterus general, and not partial, and particularly not of such a character as might indent the fundus uteri. A class of cases of inversion not adverted to by the author, but which seemed to favour his view that uterine contraction was chiefly concerned in inversion, were those occurring in the unimpregnated uterus. Dr. Priestley detailed the history of two cases of this kind. In one the patient was an old woman, and the polypoid tumour formed by spontaneous inversion was successfully removed by ligature. In the other a fibroid tumour, nearly as large as a child's head, had so pulled down the fundus that the womb was completely inverted, and the large size of the swelling so completely filled the pelvic cavity that its attachments and relations above could not be made out. The inversion was not discovered until it had been pulled by midwifery forceps beyond the vulva, and it was then deemed best to push the tumour back into the vagina, rather than attempt any further operation at that time. The result had been that either from the pressure employed in pulling it down, or from some other cause, the troublesome discharges entirely ceased, and the patient was reported to be comparatively well.

CASE OF INVERSION OF UTERUS; SPONTANEOUS REDUCTION.

By Henry S. Shaw, M.R.C.S. Eng.

(Communicated by the President.)

I was called (in the absence of Dr. Eastlake, Physician-Accoucheur to the Western Dispensary) about 5 p.m. to see

a patient just confined, as the midwife had discovered something wrong immediately after the birth of the child.

The patient's name was Harriet Duncan, æt. 21, a primipara. Her previous history was as follows: has had one miscarriage at two months; has had several slight attacks of hæmorrhage during the last five months of pregnancy. Labour pains came on about 4 a.m. on the morning of the 6th. Midwife was called in about 10 a.m., but left immediately after making an examination. Patient got up and walked about until 3 p.m., when she had two violent pains, and was scarcely on the bed before the child was born. On my arrival the midwife informed me that when she was called in in the afternoon she found the child in the bed and the placenta nearly away. She removed the latter, and with it a few shreds of membrane which remained behind, the whole coming away easily and completely; she then found a tumour in the vagina and almost protruding through the outlet, and sent for assistance. I found the patient lying on her back, complaining of severe bearing down pains, and a dragging sensation, especially when coughing. She appeared very much exhausted; skin was cold, and pulse very small and feeble. I ordered her some brandy directly, and placed her on her left side, when I found the outlet and lower part of vagina occupied by a large round tumour about the size of an orange, hard, tense, and perfectly immovable. I passed my finger up behind it and found it to be of a pyriform shape, the pedicle, if it may be so called, lying against the anterior wall of the vagina. No uterine tumour being felt above the pubes I judged the case to be one of inversion of the uterus. I then proceeded to reduce the displacement, commencing by conjoined compression and upward pressure upon the swelling, but without success. I then determined to consult Dr. Hall Davis; before leaving, however, I gave her a draught of—

℞ Tr. Opii, ♏xxv;
Sp. Chloroform.,
Sp. Ammon. Aromat., ää ♏x;
Aquæ, ℥j;

promising to return as soon as possible. Dr. Davis was unable to come to the case, being elsewhere detained, but he advised careful persistent efforts, at reduction, under chloroform. On my return I found that the patient had had a nice sleep and felt easier, and on examining, to my surprise and satisfaction, I found that the tumour had disappeared, and that the vagina was free from contents—the os uteri being felt high up and unoccupied by any protrusion. The fundus could now be felt distinctly above the pubes. There had been no hæmorrhage of consequence from the time of the accident. I then gave her a smaller dose of opium, and told the friends to report to me the next morning, which they did, favorably, so I did not visit her until the next day, when I made another examination, and could feel the os uteri still very high up and the body of the uterus could be felt above the pubes. She has since done well and is rapidly gaining strength.

CASE OF MONSTROSITY; WITH SPECIMEN.

By Thomas Langston, L.R.C.P. Ed.

On the 3rd of January, 1868, I was requested to visit Mrs. C—, æt. 22, who was said to be in the eighth month of first pregnancy.

She was in bed, and complained of severe pains in the muscles of the abdomen, was slightly feverish and highly nervous. I prescribed a saline mixture and two grains of powdered opium at bedtime.

4th.—She had passed a restless night and was not much relieved, there being evidence of approaching labour. I made a vaginal examination; the os uteri was high and dilated about the size of a shilling. I could not determine the presentation.

She continued to have irregular pains, and at the end of four hours I made a second examination.

The os was now considerably dilated, the membranes

ruptured, and a hand and arm presented. I therefore resolved to turn in the usual manner, and delivered her of a still-born female monster. The patient made a favorable recovery.

She stated that she had been frightened by a cat jumping upon her when three months pregnant, from which time she had an impression that all was not "right."

The accompanying illustration represents the specimen.

Fig. 1.

The cranial vault is entirely wanting, and the vertebral column cannot be traced; a thin membrane covering the upper portion of the spinal cord.

MARCH 4TH, 1868.

J. BRAXTON HICKS, Vice-President, in the Chair.

Present—52 Fellows and 8 visitors.

Books were presented by Professor Pietro Lazzati, Dr. G. E. Fenwick, and Dr. W. H. Byford.

Dr. Julius Levy and Dr. John Jones were admitted Fellows of the Society; and Dr. Charles William Marriott, of Leamington, was declared admitted.

The following gentlemen were elected Fellows of the Society:—Mr. W. F. Butt; Dr. R. Dyce, Dr. James Ellis, Dr. Richard Fegan, Dr. Ashton Godwin; Mr. Geo. A. Kenyon, Mr. J. R. Lynch; Dr. James Nicholls, Dr. George J. Sealy, and Dr. Charles W. Turner.

Dr. MURRAY exhibited for Professor Byford, of Chicago, a new pelvimeter. The instrument is a modification of Baudelocque's Callipers, and by its aid the different diameters of the pelvis can easily and accurately be taken.

Dr. MEADOWS exhibited for Dr. Turner two specimens of ovarian dropsy which he had removed from a patient eight days previously, and who up to that time was going on very well. The patient was 19 years of age, and, notwithstanding that both ovaries were converted into two large dropsical sacs, and that no proper ovarian structure could be discovered, she had continued to menstruate regularly and rather profusely from the age of fourteen, when it began,

up to the time of the operation, the last period having ceased about a week before.

A discussion ensued in which Dr. Barnes, Dr. Hewett, Dr. Tyler Smith, Dr. Snow Beck, Mr. Chambers, and Dr. Murray took part. It was generally considered either that a portion of one of the ovaries must still remain and be in a healthy state, or that the cysts removed and exhibited were really cysts of the broad ligament separate and distinct from the ovaries themselves. Dr. Meadows was requested kindly to watch the case, and report if menstruation again took place.

Dr. Aveling exhibited a pair of midwifery forceps, the handles of which were curved backwards. By this modification a better grasp is obtained in making traction. The handles are more out of the way of the operator in introducing and locking the blades, and are also not interfered with by the legs of the patient when the head is passing over the perinæum.

CASE OF RUPTURE OF THE UTERUS OCCURRING DURING LABOUR.

By E. J. Asbury, Esq.

(Communicated by Dr. Murray.)

A lady, æt. 35, of considerable mental attainments and good general health, the mother of two children living, miscarried about a year ago. Labour pains commenced on the evening of the 21st December, 1867.

Without prior engagement I was summoned to attend at 10.30 p.m., and was with my patient by 10.45. Found she had had pains for some hours, although she dined down stairs at 6 p.m. Undressed and got into bed at 9 on account of the pains. She appeared cheerful; pulse good;

skin natural; the face flushed, but not more so than is usual in labour. The abdomen was very large. Upon examination the os was fully dilated, soft parts relaxed and cool; the presentation natural; a firmly ossified head pressing upon the brim of the pelvic; pains occurring every four or five minutes: they were short and spasmodic, but not expulsive; the membranes had ruptured, the liquor amnii escaping into the bed; there had been rather free hæmorrhage, but this had now stayed. The pelvic apertures were roomy.

Considering the want of expulsive power to be the result of excessive distension of the uterine and abdominal walls, and the only obstacle to a speedy termination of the labour, I passed a broad towel round the abdomen, and pinned it behind, with the view of supporting and regulating muscular action, using occasionally gentle traction during a pain.

At 11.30 there was no further hæmorrhage; pains continued much the same in character, though they were more frequent; the head had not advanced. She had taken some warm brandy and water, and now complained of feeling tired and wished to be turned upon her back: to this I consented under the idea that gravitation of the child backwards might expedite the delivery. Whilst in this position a pain soon occurred, which caused a cry as of alarm, and she instantly became deathly pale, cold, and pulseless. I quickly poured down brandy and water as strong of the spirit as she could swallow; hot bottles were placed to her feet, and the hands were rubbed and wrapped in hot flannel. She shortly revived and the pulse returned in the wrist. Fearing the uterus had ruptured I quickly made an examination, the head remained as before, and had not receded. I instantly communicated with her husband, and called to my assistance my valued friend and predecessor, Mr. Allison, who promptly attended. By this time my patient had rallied, had been replaced on her side, and the abdominal bandage readjusted. The pains continued, but feebly and at longer intervals. On consultation, we at once decided upon the necessity of terminating the labour with all possible speed, by crani-

otomy, as the safest means to the patient — version, from the membranes having ruptured early in the labour, being out of the question, as on the one hand presenting considerable difficulty in its accomplishment, and on the other the danger of increasing the rent in the uterus, should there be one. Moreover, there was no evidence of the existing life of the child from any pulsation at the fontanelle or from any fœtal movement. The patient being well supported by brandy and water, and the instruments quickly got ready, I reduced the head, and fixing the hook brought it down. The child, however, proved to be a male, of more than ordinary proportions, and thus considerable difficulty arose, increased by the loss of uterine expulsive power; and consequently time was necessary for carefully completing the delivery. The patient appeared to bear the first part of the operation tolerably well, and swallowed some gruel and brandy, but with the descent of the child exhaustion rapidly set in. Mr. Allison, therefore, continued the operation whilst I administered restoratives, and placing one hand upon the abdomen I could distinctly feel a knee and foot apparently out of the uterus and lying against the abdominal walls; the patient now became collapsed and unable to swallow, and death took place with the completion of the delivery and extraction of the placenta.

Afterwards I passed my hand into the uterus, and found a transverse rupture, about four inches in extent, situated laterally on a line about midway between the umbilicus and left anterior superior spinous process of ilium, and about one third from the fundus, the upper divided surface stretching straight across the wound, the lower hanging loosely, in the form somewhat of a pouch, the edges inverted, *i. e.* within the uterus; passing through the wound the hand was at once in contact with the intestines. We were particularly struck with the thinness of the uterine walls at this point.

The history given to me by the nurse is to the effect that she undressed and placed the patient on the bed at 9 o'clock, on account of the pains; but after lying a short time she expressed a desire to empty the bladder, and got out of bed

for that purpose. During that time she felt *something give way*, and mentioned it. She then got on the bed again, and there was some hæmorrhage. The pains continued, and shortly the membranes ruptured and the liquor amnii escaped into the bed. So she remained in the charge of the nurse until 10.45, the time of my visit. It appears to me probable that this "something giving way" was the separation of a small portion of placenta from the uterus, and that the consequent hæmorrhage was arrested with the escape of the liquor amnii and closer contact of the parietes with the disunited portion of the placental mass. (There is no evidence of hæmorrhage having taken place prior to the time of rising from the bed.) I think the rupture of the uterus occurred at the time she moved on to her back, possibly slightly at first, and extending afterwards; and that the head of the child not having receded may be accounted for by the broad towel placed round the abdomen affording support, and preventing the partial escape of the child through the uterine rent. It is necessary I should state that no chloroform, ergot of rye, or any other drug was administered, inasmuch as I placed my faith in brandy, which was freely given as circumstances required.

I am informed that this lady's general health was unusually good during her pregnant state. She was also of active habits, had passed through two previous confinements successfully, the last of them having been completed by the aid of only a few pains, and before the medical attendant had time to reach the house. How then are we to account for this thinning of the uterine walls, whereby they gave way during contraction upon the body of the child? It was not the excessive uterine contraction we sometimes meet with, or from a rigid undilated os, requiring opium. I have described the character of the pains as short and spasmodic; they were remarkably so, and it occurred to me that there had been distension of the uterine and abdominal walls, whereby muscular contractility had been impaired; that, in fact, it was the want of uniformity of action between the uterine fibres and the neighbouring muscles that was the

cause of delay in this case, and this led me to the employment of the bandage as a means of assisting muscular action. The patient was short in stature, did *not* wear stays or any mechanical support during her pregnancy, and in the last months her abdomen assumed unusually large proportions. Still she actively employed herself both in and out of doors, and was walking out both during the morning and afternoon of her confinement. That this over-distension of muscular fibre would impair its contractile power is, I think, very probable. We know, for example, the effect produced by an over distended bladder, requiring the subsequent use of the catheter until the muscular tone is restored. The question remains, would the distension both thin and weaken the parts? Of the former I think there is no doubt; stretch any substance, without the addition of fresh matter, and it must, of necessity, be thinned. Would it weaken? Decidedly, under some circumstances; for example: Take a broad india-rubber band, stretch it moderately and it is thinned, but not weakened, because sufficient elasticity or contractile power remains to restore it to its former condition when allowed to do so; but stretch it more forcibly, and retain it for some days in this state, and on removing it its contractile power will be found to be lessened—it does not return to its original length; it is weakened, and the finger may be more readily thrust through it than before being put on the fullest stretch.

I am unable to form any other opinion as to the cause of rupture than "that it was due to over-distension of the uterine and abdominal walls, whereby they have become permanently thinned and weakened. That possibly degeneration of muscular fibre had taken place, and that when the time arrived for nature to complete her task, the means at her disposal were insufficient for the purpose. The uterus acted convulsively and without uniform assistance from the required muscles, and during one of these efforts gave way.

Dr. Barnes believed that Dr. Murphy was one of the first

to describe a softening or other alteration of the uterine tissues as the cause of rupture. Since then the tissues had been often examined. He himself had carefully examined the tissues in three cases of rupture, and he had found no more degeneration than that normal amount of granular change of the fibre-cells which always existed towards the end of pregnancy as a preparation for solution of the tissues about to become superfluous; certainly, then, although degeneration of tissue might sometimes be present, it was not a constant or necessary condition. He had asked if the child in the case related had been dead some time before the rupture. He had known this to be the cause of rupture. Where the child was long dead it had lost its resiliency and its fitness for being driven through the pelvis, and thus might become as efficient a cause of obstruction as even a narrow pelvis.

Dr. Graily Hewitt thought it likely that the abortion which had occurred had an influence in producing the irregularity in the thickness of the uterine walls in the case related. The undue size of the head was also an important element in the case. As a matter of practice he believed it very difficult to ascertain in the early part of a labour whether the head was unduly large or not, but it was a matter of some moment in reference to cases such as this. The rupture of the uterus which occurred in this instance could hardly have been anticipated, and it would appear that the treatment adopted was most prompt and appropriate.

CASE OF CÆSAREAN SECTION.

By J. Braxton Hicks, M.D., F.R.S., &c.

The patient was an illegitimate woman, æt. 37, advanced 208 days, or seven lunar months and five days, in pregnancy, also illegitimate. She could not be persuaded to come into the hospital earlier, although earnestly urged to do so by Dr. Rootes of Hereford, by whom she was sent under my care into Guy's Hospital, August 26th, 1867. She was much bent forward by an anterior curvature of the spine, especially of the lumbar vertebra; leaning to one side from a diseased knee-joint, so that she was not much over four feet high.

Her pelvis was carefully examined under the influence of

chloroform; and it was found that the form of the brim was rostrate, but not so bad, but that had the outlet been good even a living child at the seventh month might have been brought through it after version, but this part was so reduced that between the tuberosities of the ischia only one and a quarter to one and a half inches remained, and about one and a half inch from these points to the tip of coccyx; so that, perhaps, by the yielding of the coccyx and the soft parts the outlet might have permitted one to perforate, yet that so little command of the situation would have been afforded that it seemed more than an equal chance that, having begun delivery per vias naturales, we should have to complete it by abdominal section.

Hence I determined to allow pregnancy to go on till a fortnight before full term and then to operate. This time was chosen that the uterus should not be undergoing that degradation of its tissues which occurs about full period of pregnancy. Accordingly, on the 25th October, 1867, the operation was performed, Drs. Greenhalgh, Barnes, Gervis, Arendrup, and many of my colleagues being present, Dr. Oldham and Dr. Phillips assisting. Two doses of secale were given in the morning of the operation, which roused the uterus well. There was nothing particular to be noted of the operation, excepting that the incision extended from umbilicus to nearly the pubis, and that owing to the pressure, had it been longer, the uterus would have escaped by the external wound. The child's breach was immediately under the line of incision, which facilitated its removal; the uterus contracted after the removal of the placenta without hæmorrhage. It was grasped to secure its perfect contraction, and the external wound ultimately closed by silver sutures. Chloroform having been withdrawn vomiting immediately came on, so as to force from lower end of the wound some blood. The lower suture had not been brought together, purposely, so tight as the upper sutures. External pressure was kept up, and it was found that there was nothing more than the slight oozing of blood going on, extruded by the vomiting, which continued severe for twelve hours and then gradually

subsided till the end of about the thirtieth hour, when it recurred with violence, causing about half a pint of dark blood to flow from the lower end of wound. About this time the lochia ceased to flow, a catheter was passed up, but nothing came; a laminaria tent was also introduced, but without result. Although the vomiting continued after, no blood flowed out through the wound. But about forty-eight hours after the operation tympanitis began, and continued a most distressing symptom to the last; her deformed spine adding much to the discomfort. The pulse was quick from the date of operation, gradually rising to 130 and lastly to 150 per minute. About the seventy-second hour symptoms of exhaustion began to be unmistakable, and she died at the end of four days.

Twelve hours before her death the tympanitis was so extreme that I tapped the intestine with a very fine trocar and canula, a plan I had done in three other cases previously, with very great relief, in this as in the others, so much so that an hour or two before she died she requested me to repeat it, which I did with the same result. The child was taken charge of by Dr. Phillips immediately after extraction, and after some little trouble it breathed, and shortly became a vigorous infant. It lived, however, about a month and died of thrush.

The *post-mortem* examination showed a general blush over the peritoneum; no blood except a very small portion in the line from uterine wound to the external one.

The opening in the uterus was then found to be not in the centre of the anterior wall, but at the side, nearly close to the commencement of the Fallopian tube, so that the uterus must have twisted a quarter turn round during its development. There was a small fibroid imbedded in the walls near the line of incision. The cervix and lower part of body were contracted, but not occluded. The wound was still open. The outer layer of uterine fibres had retracted, so as almost to evert the edges. The internal surface of the uterus was clean and healthy. No trace of lymph or pus was to be observed anywhere.

The external wound was nearly closely united; these are the principal features in the case, and they seem to present a few points worthy of consideration.

First. As regards the period of pregnancy at which the operation was done. Although there is a great convenience in performing it before labour has commenced, yet we have a cervix which is more likely to contract after the uterus is emptied: and this brings one to the *second* point, namely, whether it is better to close the uterine wound by suture or to leave it open. Various opinions are held on this point, and I cannot help thinking that, had the uterine wound been closed in this case, many of the most serious complications would not have occurred; for let us consider the condition of the organ after this operation.

Suppose we have a closed bladder filled with water, and then make two holes in it, one three times the size of the other: it is clear that at least three times will flow from the larger than the smaller; more than three times will flow if pressure be put on the bladder, because of the more round form of the opening. Let the uterus be full of fluid and with two apertures in it, it seems clear that the tendency to flow will be more in the direction of the wound than through the small cervix. We know the tendency of the cervix is to contract quickly, while that of the wound is not so.

This tendency of the discharges was in this case increased by the position of the wound.

It may be rejoined that, practically, there is a difficulty in the way, in the tendency of the stitches or sutures to be drawn out or tear through by the uterine action; still one could hardly suppose but that they might be put in such a depth as shall prevent this result.

Perhaps we might take a hint from some of those cases where a second pregnancy has occurred. It has been noticed that as soon as the integument is divided upon the second operation the uterine cavity is at once reached, so that here union has occurred between uterus and parietes.

Would it not be possible to bring the edges of both uterine and parietal wounds together by the same suture? whereby

if the os uteri does close, a security from intrusion of the uterine contents will be gained if any severe vomiting or exertion should arise. At any rate it could scarcely prove less successful than the other plan.

The *third* point is, that it will be noticed the vomiting from chloroform was a great drawback and serious danger, and I am strongly of opinion that the use of the ether spray is much safer, as has already been pointed out by Dr. Greenhalgh.

The last remark I wish to make is with regard to the tapping for extreme tympanitis. This I have done four times without any mark observable at the post-mortem; it gives very slight pain, immense relief, and is unattended by any extravasation, either fluid or gaseous, into the peritoneal cavity.

Mr. Spencer Wells said that when he first suggested the use of sutures to close the opening made in the uterine walls, at a meeting of the Society in 1863, as a means of preventing the escape of blood or other fluid into the peritoneal cavity, and thereby lessening mortality after Cæsarean section, he had not tried the plan, nor had it ever been tried, so far as he knew. And some speakers at that meeting thought the sutures not only unnecessary, as the uterine contractions would close the opening, but might be injurious by setting up metritis. But in 1865 he had put the plan into practice in the only case in which he had performed Cæsarean section. The case was published in the journals of that year, and he had recently seen the woman quite well. He used a long piece of silk as an uninterrupted suture, leaving one end hanging out through the cervix and vagina. By pulling on this end the suture was removed after several days. It served a useful purpose, also, by maintaining drainage of the uterine cavity downwards. Perhaps in cases of ruptured uterus the patient would have a better chance of recovery if the child were removed through the abdominal wall, and the uterine opening closed by suture, than if the child were removed by tedious obstetrical operations.

Dr. Barnes observed that the pelvis seemed to be an example of Naegelé's *pelvis obliqué-ovata*, as well as being generally contracted. He did not believe that in this case anything could have been gained by dilatation. He never had forgotten the case related by Dr. Tyler Smith, some years ago, in which he had been able to complete delivery after craniotomy by dilating the pelvis.

The possibility of opening up an osteo-malacic pelvis, so as to make room for the passage of the child, should always be borne in mind. He remembered a most interesting illustration. A young physician had invited a number of *confrères* to witness a Cæsarean section. Everything was prepared for the operation, when Osiander requested permission to examine the patient. He examined so well that he dilated the pelvis, turned, and extracted a living child, and thus baulked the operator of his operation. With reference to the question of delivery by craniotomy in the case under discussion, he was firmly convinced that, if it had been possible, Dr. Hicks would have done it. The demonstration he had given in that room of the mode of performing craniotomy by taking off the calvaria, and bringing down the face, was enough to show that Dr. Hicks was prepared to carry out the operation to the extremest possible cases. But this mode was more adapted to cases of pelvis flattened from behind forwards than to such a case as the one before the Society.

Dr. Braxton Hicks, in answer to various questions, said he had debated carefully, assisted by Dr. Oldham, on the question of this operation, and although he had been called to the patient in actual labour, with the head through the brim, he should have endeavoured to deliver by craniotomy; still, he thought altogether the risks were quite as great, if not more, with craniotomy, and then we had the advantage of a living child.

THE HISTORY OF THE FLORENCE NIGHTINGALE LYING-IN WARD, KING'S COLLEGE HOSPITAL.

By Charles C. Rowling,

LATE RESIDENT ACCOUCHEUR TO KING'S COLLEGE HOSPITAL.

(Communicated by Dr. W. S. Playfair.)

Having been engaged in compiling the statistics of the Florence Nightingale Lying-in Ward at King's College Hospital, it has been suggested to me that it would interest the Obstetrical Society to see the result. I have now, therefore, the honour to lay before the Society the history of this ward from its foundation in 1862 to its closure, on

account of the gradually increasing mortality among its inmates at the end of 1867.

After the Crimean war a large sum of money was raised by the friends and admirers of Miss Nightingale, which it was intended to present to her. She would not take it for herself, but wished it to be applied to the purpose of instructing women in nursing. Among other things, arrangements were entered into with the authorities of King's College Hospital to set apart a large ward in the hospital as a lying-in ward where young women, properly recommended, could be instructed in midwifery. The ward was situated at the top of the hospital, and had two small wards opening out of it. Two other wards were on the same floor, but separated from it by a long gallery which communicated with the staircase, running round a large shaft from the bottom to the top of the hospital. These were No. 4, a medical ward, and the Pantia Ralli, a ward for diseases of children. Directly below the proposed lying-in ward was a medical ward, and below that again a surgical ward, besides two other medical and three surgical wards on different floors, all opening into the shaft before spoken of.

Dr. Farre, who was then Physician-Accoucheur to the hospital, objected to the collection together, under the same roof, of parturient women and medical and surgical cases, and said that the only conditions under which he would undertake the charge of a lying-in ward at the hospital were, first, that the women should be kept perfectly separate from the rest of the hospital; and secondly, that there should be a large cubic area of air allowed to each woman. Both these conditions were, and have been ever since, fulfilled as far as possible. Every possible precaution to ensure the safety of the patients was taken. The long ward was only used for convalescent patients, the two smaller wards being used alternately for delivery wards, each of which was used for three weeks at a time and then shut up and cleansed most thoroughly. Each patient in the long ward had 3200 cubic feet of breathing air, an amount considerably above the average allotted to hospital patients generally. Students who

were dissecting or attending the surgical practice of the hospital were requested not to come into the lying-in ward. The resident accoucheur and his clerks were cautioned against going to post-mortems, or into the surgical ward. Disinfectants—charcoal, Condy, carbolic acid, &c.—were constantly used in the wards; in fact, no precautions were neglected that would ensure the most perfect hygienic conditions. Dr. Priestley, Dr. Farre's successor, expressed it as his opinion that he never knew a "maternity" so perfect in its details; and numerous obstetric physicians of note on the Continent had seen the ward and expressed their admiration of the whole of the arrangements. Yet, as I shall show presently, the history of the ward is one of painful mortality to the women confined within its walls. This mortality it was that induced Dr. Priestley, much as he regretted parting with so valuable an aid to his teaching, and so great a benefit to the students attending the hospital, to recommend the Committee to close the ward.

The ward was opened in January, 1862, and in that year 97 women were delivered there. Of these, 3 died; 2 from puerperal fever, and 1 from puerperal peritonitis. Two of these deaths were after purely natural labours; 1 was a case of twins, complicated with phthisis. The proportion of maternal deaths that year was 1 in 32·3 labours.

In 1863, 105 women were confined, and there were 2 deaths; 1, in a case of stillbirth, from puerperal fever, 1, after a natural labour, from puerperal fever. The proportion of deaths that year was 1 in 52·5 labours.

In 1864, 141 were confined and there were 3 deaths; 1, after a natural labour, from puerperal fever, 1 from pyæmia after the induction of labour at the eighth month, and 1 from post-partum hæmorrhage, the child being born in a cab on its way to the hospital. The proportion of deaths that year being 1 in 47 labours.

In 1865, 163 women were confined, and there were 5 deaths; 3 of which were natural labours, 1 dying of puerperal fever, 1 of puerperal peritonitis, and 1 of thrombosis of the right side of the heart and pulmonary artery. The 2

others were both primiparæ, and were both delivered by the short forceps, 1 dying of puerperal fever, and one of puerperal metritis and pelvic cellulitis. The proportion of deaths that year being 1 in 32·6.

In 1866, there were 150 women confined, and there were 5 deaths, 2 of which were natural labours; 1 dying of puerperal fever, the other of gastro-enteritis. Of the 3 others 1 was a case of adherent placenta, which had to be peeled off by the hand, dying of puerperal fever, another was a case of placenta prævia, dying of bronchitis and emphysema, the third was a primipara delivered by the long forceps, who died on the fifth day of peritonitis. The proportion of deaths for that year was 1 in 30 labours.

In 1867, 125 were delivered in this ward, and there were 9 deaths. Of these, 5 were natural labours, one of which, however, had erysipelas when admitted, dying a fortnight afterwards from puerperal peritonitis; another had considerable post-partum hæmorrhage, and died of puerperal fever; a third had some clots removed from the uterus by the hand, dying of pyæmia; the other two were unattended by any bad symptom till puerperal fever set in and proved fatal in about a fortnight in each case. Of the remaining 4, 1 was delivered by turning, and died ten days afterwards from puerperal peritonitis. Another had severe rigors during her labour, possibly the effect of malarious poison imbibed before she was admitted into the hospital. A third was a case of twins (primipara); the first child was born naturally, a breech presentation, it had been dead for some time. There was a complete cessation of all uterine action after the birth of this child, and the second had to be delivered by turning. This woman died on the fifth day of puerperal fever. The last case was also a primipara, who was delivered by forceps in consequence of the supervention of convulsions. There was some slight laceration of the posterior wall of the vagina, and she died on the sixth day from puerperal fever. The proportion of maternal deaths that year reached the startling amount of 1 in 13·8.

The average maternal mortality for the whole six years is 1 in 28·9 labours.

From various sources—the lying-in hospitals of Paris, St. Petersburgh, London, Vienna, Glasgow, Liverpool, and Dublin—I have collected statistics of nearly 90,000 women, and I find their average mortality to be 1 in 29·3 labours.

The average at the Rotundo Hospital, Dublin, for the six years from 1861 to 1866 is 1 death in 34·9 labours.

The average at the British Lying-in Hospital for the last six years is 1 in 54·8 labours.

So that the mortality in the Nightingale Ward has been higher than the average of the large number of cases that I have collected, and much higher than many of the places taken individually. An interesting question then arises, What is the cause of this high rate of mortality? We have seen that the general arrangements to secure thoroughly hygienic conditions were as nearly perfect as could be; then why should there be so many deaths? I have no hesitation in saying that the reason is, what Dr. Farre originally objected to, the collection under one roof of medical and surgical cases, especially the latter, with midwifery cases. Without the utmost precautions this could not but be attended with the most dire results. As it was, the transmission from the other wards to the Nightingale, of the air poisoned in those wards, was wonderfully facilitated by the construction of the hospital. The only outlets for the air coming up from below were the Nightingale Ward, the Pantia Ralli, No. 3, and the dormitories, the chief of which was the Nightingale; and through this ward, in spite of all precautions, the impure air would in all probability pass. That it did so pass is proved by the fact that on more than one occasion the women occupying the beds nearest the door were bad and had high temperatures, while the rest of the women in the ward were going on quite well. I have not been able to obtain any actual records of the fact, but I have no doubt that the outbreak of erysipelas and pyæmia which occasionally occurred in the surgical wards was the signal for the occurrence of puerperal fever in the Nightingale.

Within the last six months the ward has certainly had the only outbreak of puerperal fever, occurring at a time when erysipelas and pyæmia and allied unhealthy inflammations were rife in the surgical wards. During this time an interesting fact occurred, showing the connexion between erysipelas and puerperal fever. The child of the last patient, who was delivered by the forceps, was slightly marked by the instrument behind the left ear. From this erysipelas started, spreading over the head and face, and the child died. As will be seen from the paper which I hand round, our rate of mortality has been gradually increasing. I can give no adequate reason for this except that the number of difficult, tedious and instrumental labours have been greater of later years, and these weakening the women have rendered them more susceptible to the contagion, and less capable of resisting the attacks of puerperal fever.

Dr. Barnes said that no paper was more deserving of record in the 'Transactions' than this, in order that it might stand as a warning against the repetition of the most disastrous experiment related. Was it necessary to repeat an experiment which ample experience in every country had over and over again proved to be fatal? This tendency to repeat a fatal mistake was more the fault of the lay members of society than of medical men. He did not suppose that any physician in this town would now advocate the establishment of a lying-in ward in a general hospital. Dr. Farre had never approved of it. He himself had strenuously resisted a proposition, at one time contemplated, to establish a similar ward in the new St. Thomas's Hospital. So deeply had the mortality of lying-in hospitals, even of those constructed with every care that modern research could devise, impressed many of the most eminent men in Paris, that the expediency of suppressing these hospitals and of substituting home midwifery was now admitted.

Dr. Graily Hewitt said that lying-in hospitals, as they had been organized up to the present time, were most undoubtedly objectionable. The secret of the successful treatment of lying-in cases was isolation. If the patients were isolated from each other by suitable means and in suitable buildings, there was no reason why the mortality should be higher in a lying-in hospital than elsewhere; but in the existing hospitals these precautions had not been attended to.

Dr. Playfair most cordially agreed with all that Dr. Barnes

had stated as to the dangers of lying-in hospitals in general. The position of the ward itself was peculiarly unfortunate, being situated at the top of the hospital, above two storeys of wards, and by the side of the large central staircase, which, acting as a ventilating shaft, of necessity carried past it air saturated with the emanations of the surgical wards below. The outbreak of puerperal fever constantly coincided with the presence of erysipelas in the surgical wards. In none of the cases were the symptoms at all those of erysipelas, although the latter disease had attacked a child whose scalp had been injured by the forceps, doubtless from the same poison as had given puerperal fever to the mother.

The meeting then adjourned.

APRIL 1st, 1868.

JOHN HALL DAVIS, M.D., President, in the Chair.

Present—51 Fellows and 5 visitors.

The following gentlemen were admitted Fellows of the Society:—Mr. Jordan R. Lynch; Dr. James Ellis; Mr. George A. Kenyon; D. Ashton Godwin; and Dr. Richard Fegan.

Dr. Robert Dyce, of Aberdeen, Dr. James Nicholls, of Chelmsford, and Dr. George J. Sealy, of Weybridge, were declared admitted as Fellows of the Society.

The following gentlemen were elected Fellows of the Society:—Mr. Evan Llewellyn; Dr. Hope Robson; and Mr. Charles Case Smith.

Dr. PHILIP exhibited a specimen of Retro-Uterine Hæmatocele.

Dr. GREENHALGH exhibited a specimen of Hypertrophied Nympha, removed by the écraseur.

The PRESIDENT exhibited the Membranes of a Twin Ovum, of supposed ten weeks' gestation; these he had removed from a patient, the subject of exhausting hæmorrhage. The fœtuses, the surgeon informed him, had been expelled eight days before his (Dr. Davis) visit, but their envelopes were retained, and were felt to be adherent to the anterior and posterior walls of the uterus respectively. They were extracted by the ovum forceps, and the uterus was syringed

out with tepid water to remove blood clots. No hæmorrhage recurred after this. The patient has since done well. The specimen exhibited clearly the characters of decidua, amnion, and villous chorion. Some very minute vesicles could, through an ordinary lens, be observed on some of the villi. Owing to the vital connexion still subsisting between the membranes and the uterus no putrescency had taken place. It is not improbable that an hydatoid growth might have resulted, had not removal been timely sought for on account of the flooding.

CASE OF MALIGNANT DISEASE OF UTERUS, COMPLICATED WITH PREGNANCY.

By W. S. Playfair, M.D., M.R.C.P.,

ASSISTANT OBSTETRIC PHYSICIAN TO KING'S COLLEGE HOSPITAL.

The subject of this case was a woman, only twenty-nine years of age, who, on account of a slight surgical affection, was admitted into King's College Hospital, under the care of Professor Partridge. It was then discovered that she had been suffering for many months from severe uterine hæmorrhage, on account of which Dr. Playfair was requested to examine her.

He discovered extensive carcinoma uteri, which had produced much induration of the cervix, the roof of the vagina, both towards the rectum and bladder, being also infiltrated with malignant deposit.

The patient was also found to be pregnant, a condition of which she had no suspicion, the uterus reaching nearly to the level of the umbilicus, the gestation having, therefore, probably advanced to between the fifth and sixth month.

Some days after the examination, there having been, in the interval, another attack of hæmorrhage, symptoms of premature labour showed themselves.

The case now naturally gave rise to much anxiety, as, on account of the great induration of the cervix, there seemed

no possibility of sufficient dilatation taking place to admit of the passage of the fœtus. Only the tip of the index finger could be passed within the rigid aperture of the os, which did not exceed the diameter of a sixpence.

After the pains had continued for some time, portions of the lower extremities of the fœtus began to be extruded in a broken and almost pulpy condition. In this way the greater portion of the uterine contents were expelled piecemeal in the course of two or three days. A solution of carbolic acid was injected from time to time to diminish the excessive fœtor of the discharges, and to lessen the risk of septic absorption.

An attempt was also made to increase the aperture by sponge-tents, but they had no effect in dilating the indurated tissues.

This case closely resembled the well-known one related by Sir James Simpson in his "Obstetric Memoirs," in which a dead and softened fœtus was expelled through a deformed pelvis, although preparations had been made for the performance of the Cæsarean section.

In all probability the repeated hæmorrhages had caused the death of the embryo some time before labour commenced, and allowed of its being sufficiently broken up to pass through the narrow aperture of the os.

Had this not happened the Cæsarean section would, in all probability, have been inevitable.

EXTRACTION OF A HAIR-PIN FROM THE BLADDER OF A FEMALE BY MEANS OF AN INSTRUMENT NOW TO BE EXHIBITED.

By Dr. Protheroe Smith,
PHYSICIAN TO THE HOSPITAL FOR WOMEN, ETC.

It is stated in M. Matthew's 'Illustrated Catalogue of Surgical Instruments' in the late Exhibition of Paris, that

"it frequently happens" that young women introduce long or hair-pins and other foreign bodies into the bladder. Although from my own experience and that of other obstetric practitioners I cannot confirm the statement that such occurrences are frequent, I am able to bring before the Society one such case, which has recently come under my observation in the Hospital for Women.

Case 1.—M. J—, æt. 23, single, a dressmaker, was admitted into the hospital, under my care, on March 4th, instant.

History.—About Christmas, 1867, slipped a hair-pin, the doubled end backwards, into her bladder. She felt no inconvenience during the first two days, but afterwards suffered from irritable bladder and dysuria.

About a fortnight later she passed some blood with the urine, hæmaturia recurring occasionally since; but only during the last ten days has she experienced much pain in the region of the bladder, and scalding in micturition. The urine, when not bloody, is reported to have been, at times, thick with a white sediment, but as often normal.

Under chloroform I detected the presence of a foreign body in the bladder, both by a digital examination per vaginum and by a sound. On the 7th instant, having procured a variety of instruments, I made several unsuccessful attempts to grasp and move the pin, which, owing to the large size of the urethra, I could just touch with the point of my little finger. These efforts, however, were apparently rendered abortive by the swollen state of the walls of the bladder, which enfolded the pin at its extremities. Having thus been foiled in my endeavour to dislodge and turn it from its fixed transverse position to that of the axis of the urethra, I decided it was best to leave the case alone till I could procure a suitable instrument for this purpose. After various alterations and modifications, I got Messrs. Meyer and Meltzer, of Great Portland Street, to make for me the instrument which I have now the privilege of exhibiting. It consists, as you will observe, of two blades of steel, and so

constructed that the central or male blade, curved and denticulated at its extremity, is made, by means of a rack and pinions at the other end, to move in the outer blade, and to be projected beyond it. Thus it can be easily made to grasp a wire or pin, whether single or double, and bend it in two, so as, at once, to shorten its length, and to withdraw its extremities from the sides of the bladder without risk of injury; and whilst holding the foreign body firmly in its grasp, without fear of slipping, it allows it to accommodate itself to the longitudinal direction of the instrument, and so to facilitate its extraction through the urethra.

The urethra having been previously dilated with sponge-tents, on the 21st instant, in the presence of Dr. Meadows, Mr. Scott, Dr. Fly Smith, and Mr. Robinson, the patient was placed, as in the position for lithotomy, under chloroform, and the operation was effected by introducing first the index finger into the bladder, when the encrusted pin was readily detected, after which it was seized, at once, without any difficulty, and bent, and as easily withdrawn, in about three minutes. The extraction was followed by a slight discharge of blood, which quickly ceased. You will observe that the pin which I here exhibit is corroded, and encrusted with urinary deposit, excepting at that part which has been deprived of this coating by the grasp of the instrument. It only remains for me to say that Mr. Robinson, who carefully attended to the case whilst in the hospital, reports that during the dilatation of the urethra with sponge-tents it had once to be interrupted, in consequence of the accession of febrile symptoms, which on repetition of the process, however, did not recur; and that since the operation the patient has done so well that on the 23rd she was free from all pain; the urine was no longer bloody; and that at the end of a week she was perfectly well.

The advantages which I venture to claim for my instrument are—its simplicity, the ease of its introduction per urethrem, and certainty of its success in detecting, grasping, bending and extracting the foreign substance, without any danger of wounding the bladder, or of presenting any diffi-

culty to the operator; and in these circumstances it will be found practically superior to Mr. Matthew's ingenious instrument.

CASES EXEMPLIFYING SOME OF THE DIFFICULTIES ENCOUNTERED IN DETERMINING THE EXISTENCE OF PREGNANCY, AND THE VALUE OF AUSCULTATION AS A MEANS OF DIAGNOSIS.

By Edward Copeman, M.D. (Norwich).

1. On the 16th May, 1861, I was sent for into the country to visit Mrs. B—, a Farmer's wife, æt. 33, the mother of seven children, and healthy previous to this illness. She herself believed she had conceived in December last, at which time the catamenia stopped, and she experienced the usual symptoms and signs of pregnancy. Two months afterwards she had rather a severe loss, which continued "off and on" for nearly a fortnight; but this was not accompanied with any pain. Since that time she has had no loss, and believes she is five months gone. She has engaged her nurse for September; but, since the loss above referred to, her body has so rapidly increased in size, that she is now as large as at full term, or even larger; but the breasts have rather diminished than increased, and she has not felt any movements like those of a child. The stomach, however, has sympathized more during the last two months than at an earlier period, and she has been obliged to put herself under medical treatment for the gastric disturbance, which has been already much relieved by citrate of potash and hydrocyanic acid. Bowels regular, and tongue now clean, but spirits uncertain, and pulse above 100. The abdomen is very large, and traversed by distended veins; there is perceptible fluctuation, but not distinct as in ascites, more like that which occurs in ovarian dropsy when the sac is thick or multilocular. There is dulness on percussion all over the abdomen except

in the left hypochondriac and lumbar regions, where the bowels lie distended with air. Before Christmas there was no enlargement of the body whatever, neither was the patient cognizant of any tumour at that time. I could not detect any movement, but there was more resistance in some parts of the body than in others, giving the feeling as if they might be either thickened portions of ovarian sac, or parts of a child. In several places I could hear with the stethoscope distinctly the beating of a heart at the rate of 120 in a minute, exceedingly like that of a fœtal heart; but then it was synchronous with the mother's, and might be the sound of that transmitted through a tumour. The rapidity of the mother's pulse, therefore, rendered this sign valueless as a proof of pregnancy. I heard also in one or two situations a sound exactly similar to a placental *souffle;* but this, again, might have been caused by the large vessels of an ovarian pedicle or sac. Examination *per vaginam* did not much facilitate the diagnosis, for the uterus, although apparently enlarged, was not low down, neither could I feel any floating body in it, nor any fluctuation. The os was somewhat patent, and the cervix was short and soon lost in the rest of the uterine structure. I remarked that I had never met with a more puzzling case, but was inclined to the opinion that she was pregnant at the time she supposed; that at the period at which the hæmorrhage took place the fœtus ceased to live, and that since that time the villi of the chorion had undergone hydatidiform degeneration which, by their rapid increase, distended the body to its present volume.

Some time afterwards I received the following additional particulars from the surgeon whom I had met in consultation. "About three weeks after you saw her, one morning when I was called I found she had slight pains; and on making an examination, I found the os dilated to about the size of half a crown; and by making a slight pressure the membranes ruptured, and the gush of water was something tremendous. I had different vessels procured, and caught rather over four gallons, no inconsiderable quantity having escaped besides. There were two dead children, one larger than the other. I

should say they were between four and five months. After the waters had escaped some considerable hæmorrhage came on, when I immediately relieved the womb of its contents, gave a dose of ergot, and everything with a little attention did well. I am happy to say Mrs. B— is quite well at this time."

2. On the 14th August, 1862, I was consulted by a lady between thirty-five and forty years of age, who had been married three or four years and had no family. About four and a half months ago she ceased to menstruate, but had been previously quite regular. Shortly after this she perceived a lump in her body which moved from side to side, but as it enlarged it became more fixed, was situated to the left of the median line, and was occasionally tender. She also discovered another swelling towards the right hypochondrium, and sought the advice of a homœopathic practitioner, who recommended iodine friction to the swellings, and told her they were tumours which could not be cured, but might possibly be stopped in their growth so as not to materially interfere with her health or life. After treating her for some little time, and the tumours increasing in size, he advised her to take my opinion, and as he knew I would not meet him, he said he would willingly give up the case if she would like to put herself under my care. This was done; and on examination I found the lower swelling very like a uterus nearly half gone in pregnancy; the breasts were enlarged, with increasing colour around the nipple, and with the usual nodulations. The cessation of the catamenia might have been the result of change, and indeed had been considered to be so; but connecting this with the state of the breasts, I suspected pregnancy. I also thought I could with the stethoscope hear a placental souffle, but it was too indistinct to be quite certain about it; and the second swelling was obscure, so that I left the case for further examination, prescribing only mild aperients. At the same time I stated my suspicion to the patient that her complaint was pregnancy; and as she said a visit to Yarmouth would certainly have the effect of making her unwell if she *could* be so, I

advised her to go for a month and put it to the test. On her return I saw her again, and although even then there was a degree of doubt about the symptoms, yet I heard a sound which from experience convinced me that there was at all events a placenta. A fœtal heart I could not hear, but as the abdomen was large, the breasts more developed, and the general health good, there was no reason to suppose that if pregnant her child was dead. I now gave her a more positive opinion, advised her to go again to Yarmouth for a few weeks, and to divest her mind of all apprehension of incurable disease. On her return she wrote me that there was no occasion for any more examinations, as she could distinctly feel the movements of her child, and had no doubt about my opinion being correct.

On the 12th January, 1863, I was summoned by Mr. —, whom she had selected to attend her, on account of a very tedious and difficult labour which had already lasted many hours. I delivered her of a very fine living male infant by means of the vectis, and she had a good recovery. *No tumour remained in the abdomen.*

3. In May, 1863, I was consulted about a lady of middle age, the mother of two or three children, as to whether she was pregnant. The catamenia had been irregular, and she was supposed to have aborted a few months ago, when she had a good deal of hæmorrhage. She now thought herself pregnant again, but did not feel as usual. Her general health was out of sorts, and she could not understand her illness. The breasts were large, and discharged large quantities of fluid which stiffened her linen, "but was not milk." She felt no movement in her body, nor was she increased in size. *She* was puzzled, *her surgeon* was puzzled, and I was called in to solve if possible the mystery. This lady was immensely fat, her abdomen large but soft, and I could feel no trace of uterus. Examination *per vaginam* threw no light upon the matter; the os could scarcely be reached, and I could not feel any tumour like an enlarged uterus, or indeed any unusual fulness at the top of the vagina. But on examining the abdomen with the stethoscope I heard a sound which has never yet

deceived me, and which I interpreted to be a weak placental bruit; so weak indeed that her surgeon could not hear it. We recommended her to leave home for a month, and on her return I heard this peculiar sound louder, and pronounced her pregnant, although no other signs had developed themselves by which she could convince herself of the fact. Nevertheless it turned out to be so, and she was confined of a large stillborn child in the following September. Her labour was difficult from impaction of the head, and her delivery, which I accomplished with the vectis, unavoidably slow from the large size of the child, the shoulders of which measured six inches across. She had a good recovery.

4. A middle-aged lady came from a distance to be under the care of an experienced medical man in this neighbourhood, having suffered very much from pain and tenderness with swelling in the right iliac region, her health suffering much in consequence. She had not been unwell for more than three months, although generally regular; the breasts were enlarged and had raised papillæ around the nipple; and she had had some morning sickness, giving her the impression that she was pregnant. This was also the conclusion at first arrived at by the gentleman she consulted, but afterwards they both thought otherwise, and sought for some other cause for the persistent pain and tenderness in one particular part of the abdomen. After a while I was consulted about the case, and met Mr. M—, who gave me the above history and wanted my unbiassed opinion. I found, as I thought, almost all the ordinary signs of pregnancy; if pregnant, she was not far enough advanced for the fœtal heart to be heard; but on examining with the stethoscope I felt sure I heard a soft distant placental souffle, and I stated my rather positive conviction that she was pregnant. My fellow-practitioner, however, maintained the opposite opinion, and we agreed to defer any other than palliative treatment until time should further disclose the real nature of the case. I should mention that the surgeon with whom I was consulting could not hear the placental bruit, although familiar with its sound at advanced periods of pregnancy, and, therefore, could not

make use of that as a guide for his own diagnosis. This patient soon afterwards returned to her own home and her own family surgeon; and after suffering several different times from severe attacks of pain in the right side of the body, after several months she was safely confined with a fully developed child, and had a good recovery.

5. Mrs. —, æt. 38, mother of several children,—two or three having been born dead. There had been no return of the catamenia since her last confinement, eighteen months before, until eleven months had expired; and then, which was seven months ago, she had rather a severe loss, and has had hæmorrhage now and then almost ever since, especially under any kind of exertion; and sometimes, as within the last few days, to a considerable extent. She had a large tumour in the abdomen, central, uterine, but has none of the usual symptoms of pregnancy, nor are the breasts at all enlarged. She had had the advice of two surgeons who were in doubt as to what was the matter, one of them being of opinion that the hæmorrhage was occasioned by a large uterine polypus. On the 29th October I was requested to meet them, and at the first view I was also uncertain of the nature of the case. But on fuller examination I distinctly heard both the placental souffle and the fœtal heart, and decided it to be a case of pregnancy with the placenta attached very near the os uteri. The os uteri was slightly patent, the cervix gone, and I considered her to be about eight months advanced. Very shortly after this interview I was informed by Mr. M— that labour came on, and she was safely confined.

I was much surprised, in a recent work on the 'Diagnosis and Treatment of Diseases of Women,' by Dr. Graily Hewitt, to find him stating that "no dependence whatever is to be placed upon the placental souffle as a means of distinguishing the enlargement of the uterus due to pregnancy, from other forms of enlargement of this organ. In point of fact (he says) the retention of this sound among the signs of pregnancy is of no real service, and is likely to attract attention which would be more profitably spent in searching for the sound of the fœtal heart. It is the fœtal heart sound, *and*

that alone, in which any confidence can be placed in respect to all the signs derivable from auscultation."

Now I believe, on the contrary, that the placental souffle is one of the most valuable signs of pregnancy, second only to that of the fœtal heart, and the most dependable of all signs when the child is dead. To a practised ear the sound is peculiar and distinctive. It is not the blunt sound, or knock, such as the aorta gives if heard through a solid tumour situated over it; neither is it like what is occasionally heard—a kind of humming noise, when the stethoscope is placed over a large vascular ovarian sac; it is a softer sound, something like a guttural pronunciation of the word woof, synchronous with the heart's action, such as might be expected to be produced by forcing a fluid *per saltum* through a sponge; and towards the end of pregnancy it is so loud as to be accompanied with a twang or ringing noise. In fact it is like what might be expected to be produced by the circulation of the mother's blood through the porous or cellular structure of the placenta,—a physiological condition on which I believe the sound does in reality depend.

Dr. Graily Hewitt thought the uterine souffle one of the signs of pregnancy which were not absolutely "reliable," and in this sense he had deprecated attention to it. In some of the cases now related, other observers had failed to hear it when it was evident to Dr. Copeman's more practised ear. He still believed it to be capable of simulation by other sounds, and in that sense of the word, "non-reliable."

Dr. J. Braxton Hicks thought that in the diagnosis of cases of hydrops amnii we might derive much assistance from external ballotment, and also from passing the finger carefully up the cervix, which in these cases is always more or less patulous, and the membranes felt within. He had also found very great assistance in many cases in determining pregnancy from observing the alternate relaxation and contraction of the uterus, which was observable from the earliest time we can feel the uterus till full term if the hand be laid on the tumour. He thought sufficient prominence had not been given in works generally to this most valuable sign.

ON PUERPERAL FEVER IN THE BRITISH LYING-IN HOSPITAL; WITH REMARKS ON THE TREATMENT OF PUERPERAL FEVER.

By Graily Hewitt, M.D., F.R.C.P.,

PROFESSOR OF MIDWIFERY AND DISEASES OF WOMEN, UNIVERSITY COLLEGE
OBSTETRIC PHYSICIAN TO THE HOSPITAL; LATE PHYSICIAN TO THE
BRITISH LYING-IN HOSPITAL.

My object in presenting the following paper to this Society is to detail my experience of puerperal fever in the British Lying-in Hospital, an institution with which I was for some time connected, and where numerous opportunities occurred to me for the observation of this grave disease; and also to lay before the Society certain views respecting the treatment of puerperal fever, derived from study of the disease there and elsewhere, in the belief that the facts and experiences now respectfully submitted for the consideration of the Society and the profession will prove not uninteresting.

The facts now to be brought before the notice of the Society relate, *generally*, to the mortality within the hospital during the last few years, and *particularly* they include an exact account of the maladies affecting the patients during a period of nine months, and which were instances either of puerperal fever or a condition closely analogous to it. These nine months embrace three series of three months each, and extend over the fifteen months from December 1st, 1863, to February 28th, 1865. During six out of these fifteen months I was not in charge of the patients. It so happens that the time to which these particular records refer was one during which the mortality was almost *nil*. It is not chosen for that reason, but simply because I have not preserved records sufficiently exact of the subsequent period. I believe, however, that, as exemplifying certain important facts in reference to the nature and treatment of puerperal fever, the illustration to be given will be considered amply sufficient.

The British Lying-in Hospital, founded upwards of a century ago, stands now in Endell Street, Long Acre. The present is a new building, first used for patients in 1849. The patients admitted within its walls are poor married women. Single women are not, unless under very special circumstances, received as patients. The building is situated at the corner of a street, Short's Gardens. The wards occupied by patients look on the one side into Short's Gardens, on the other into an open space or court-yard. There is a public urinal opposite the windows of the wards in Short's Gardens.

The wards in the British Lying-in Hospital, and at the time referred to used for patients, consisted of five large rooms and one small one. These rooms are arranged as follows (see annexed plan) :

No. 1. On the ground floor a large square room, lighted by windows on each side.

[This room was hardly used at all during the time to which these observations apply.]

Nos. 2 and 3 are two large wards on the first floor, each measuring 26 × 18 × 14 feet, with cubic capacity of 6552 feet, each lighted by windows on each side.

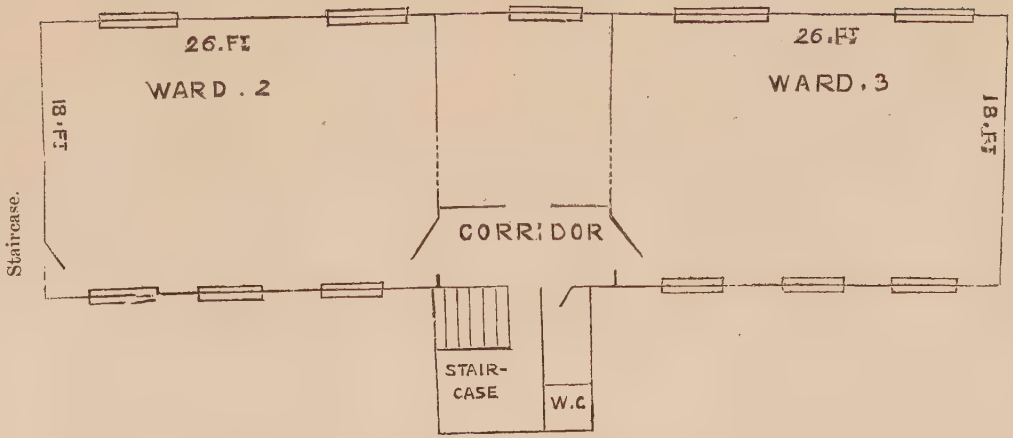
Between these two rooms opening into each is a small room 12 × 13 × 14 feet; cubic capacity, 2184 feet. During the time to which these observations apply this small intermediate room was kept isolated by closure of the doors into 2 and 3, and was only rarely used for patients.

Nos. 4 and 5 are wards situated on the second floor, immediately over Nos. 2 and 3, and corresponding to them in superficial area. The height of these wards is, however, only 12 feet. Cubic capacity of each of these two wards equals 5616 square feet.

Between these two wards is a small room, used as a nurse's sleeping room.

These four large wards were used for patients during the time to which these observations apply. Formerly the three rooms on each floor were allowed to communicate with each other, but in order to favour isolation of each ward as

Ground plan of Wards 2 and 3 in British Lying-in Hospital.



Wards 4 and 5, situated immediately above 3 and 4, have a precisely similar arrangement, but wards 4 and 5 are 2 feet less in height.

much as possible, the doors had of late been closed, so that each ward only opened on the corridor.

The water-closets, one on each floor, are separated from the wards by the intervention of a door, of a small chamber, devoted to scullery purposes, and of the corridor itself.

The wards are ventilated by open fireplaces, by opening the sashes of the windows at the top in such a manner that air readily traverses the ward close to the ceiling, and by a series of small openings and channels passing from the sills of the windows to the roof of the hospital. These latter conduits, however, are too small, and, practically speaking, the ventilation is effected by the windows and the fireplaces.

The practice as regards the distribution of the patients was as follows:—Each of the four wards contained four beds. The new patients were admitted and delivered, as a rule, in one of the two wards on the first floor, and when convalescent were moved up stairs, in order to make way for others. Hence it generally happened that those most recently delivered occupied the same room.

The patients were not admitted into the hospital until labour had actually commenced, unless under very special circumstances.

The medical responsibility of the patients was undertaken alternately by Dr. Murray and myself for three months at a time. The whole of the medical charge of the hospital was thus for the time being centered in one individual.

My duties in connection with the in-patients of the hospital commenced in 1863, and I propose to give an account of observations made in the hospital in relation to puerperal fever during the years 1863, 1864, and 1865, together with statistics of the mortality of a general character over a more extended period.

GENERAL MORTALITY IN THE BRITISH LYING-IN HOSPITAL OF LATE YEARS.

In the 'Lancet,' in the year 1862, I published a short account of the mortality between the years 1849 and 1861 inclusive. The total deliveries being in these years 1581, and the total maternal deaths 11, the death-rate was thus made 0·69 per cent. The following is a more complete account, and brought down to the end of the year 1866.

	Total deliveries.	Total maternal deaths.	Particulars as to deaths.
1849	126	0	
1850	124	1	Death 21 days after labour on November 5th.
1851	112	0	
1852	134	3	1. Died February 14th, 10 days after labour. Puerperal fever. 2. Died February 4th, 8 days after labour. Puerperal peritonitis. 3. Died April 21st, 14 days after labour. Typhus, diarrhœa, &c.
1853	121	0	
1854	143	1	Death May 2nd, 22 days after labour. Puerperal fever.
1855	147	2 (?)	1. Death March 29th, 15 days after labour. Low fever and decline. 2. Death (?) September 21st, 24 days after labour. Affection of brain.
1856	146	0	
1857	107	1	Death January 15th, 11 days after labour. Puerperal affection, diarrhœa.
1858	89	0	
1859	80	1	Death December 23rd, 11 days after labour. Breech case, hæmorrhage, peritonitis.
1860	116	0	
1861	136	2	1. Death May 31st, 20 days after labour. Contracted pelvis; craniotomy. 2. Death November 30th, 9 days after delivery. Puerperal typhus.
1862	96	4	1. Death January 14th, 8 days after labour. Phthisis, fever. 2. Death January 20th, 7 days after labour. Puerperal fever. 3. Death February 11th, 13 days after labour. Erysipelas. 4. Death December 13th, 3 days after labour. Disease of chest of some standing, exhaustion.

	Total deliveries.	Total maternal deaths.	Particulars as to deaths.
1863	138	1	Death September 27th, 15 days after labour. Peritonitis setting in 12 days after labour, due to exposure. Delivered prematurely at 7 months. Was only married five days before labour.
1864	199	0	
1865	232	5	1. Death February 15th, 2 days after labour. Old-standing heart disease; had not been able to walk for some weeks. 2. Death May 21st, 6 days after labour; æt. 24, primipara. Twins. 1st delivery, footling, at 3.15 a.m. 2nd, forceps, 1.55 p.m. Much hæmorrhage from retained placenta. 3. Death September 12th, 9 days after labour. Puerperal hysteritis. 4. Death November 1st, 4 days after operation. Contracted masculine pelvis; high forceps operation. Much hæmorrhage after artificial removal of placenta. 5. Death November 1st, 1 day after labour. Was dying on admission. Severe chest affection, pneumonia.
1866	192	4	1. Death January 24th, 9 days after delivery. Exhaustion and diarrhœa.
(Hospital closed for repairs for two months.)			2. Died March 7th, 12 days after delivery; single. Acute rheumatic fever. A great drunkard. 3. Died March 23rd, 14 days after labour. Embolism. 4. Died June 20th, 11 days after delivery. Puerperal fever. Came from Fever Hospital.

During the early part of the year 1862, and before I had taken, in conjunction with Dr. Murray, charge of the in-patients of the hospital, several patients were the subjects of puerperal fever, and four of them died. Two others were discharged in a very weak state, and the hospital was for a time closed.

As soon after taking charge of the in-patients as circumstances admitted, steps were taken by Dr. Murray and myself to isolate the patients to a greater extent than before. The number of beds in each ward was reduced from six to four, and the communications between the wards as much as possible cut off.

It will be observed that the number of patients delivered

in the hospital had, during the years 1863, 1864, 1865, and 1866, very much increased, the numbers delivered annually being of late rather more than double the number of deliveries previous to 1863.

During the four years 1863, 1864, 1865, 1866, there were 761 deliveries within the hospital. The maternal deaths were altogether in these four years 10 in number, or 1·3 per cent. Putting the statistics of the hospital together for the seventeen years 1849—1866, the total deliveries were 2438. The total maternal deaths were 25. The per-centage during the seventeen years was, therefore, 1·02.

PUERPERAL AFFECTIONS OBSERVED IN THE BRITISH LYING-IN HOSPITAL DURING NINE MONTHS.

I purpose now to give particular observations respecting puerperal disease in the hospital during one year and a quarter, commencing December 1st, 1863, and ending February, 1865. During this period Dr. Murray and myself had, as before remarked, alternately charge of the hospital for three months, and my only reason for selecting this time is that the records I have preserved of the medical history of the patients are for that period sufficiently complete and exact.

The facts will be given in a chronological order.

1863, Dec. 12th.—E. T—, æt. 20. First labour, male child. Five days after labour, pain in abdomen, relieved by poultices, &c. Dec. 20th, thirteen days after labour, pain, pulse 110; fourteenth day, sickness; fifteenth, herpes labialis, pulse 120, skin very hot, nipples sore; twentieth day, left hospital well.

Dec. 20th.—M. C—, three days after labour, rigors; pulse 116, tongue whitish fur, headache, pains in abdomen; pressure to abdomen, fomentations. One grain of opium twice a day. Dec. 21st, pulse 100, tongue clean. Discharged well twelve days after labour.

Dec. 31st.—M. C—, æt. 25. Three days after labour had a few rigors; had been anxious and fretting; pulse tranquil. For the next few days had occasional headache. Discharged well seventeen days after labour.

1864, Jan. 6th.—S. S—, æt. 24. On fifth day after labour a severe rigor at 11.30 a.m.; four ounces of brandy ordered; in an hour copious perspiration. In evening pulse 100, better. Sixth day, at 9 a.m., pulse 90. Fainted at 11.30 a.m.; brandy repeated. At mid-day pulse 120; there is a somewhat offensive odour about the patient; perspiration copious; thirst; no appetite. Seventh day, much better, pulse 100. Eighth day, brandy omitted, beer given instead. Twenty days after labour discharged well.

Jan. 17th.—Mrs. H—, æt. 37. Eight days after labour, rigors set in at 5 p.m.; brandy given at once (3 oz.); another rigor during night. Ninth day, no pain, no more rigors, pulse 120. Tenth day, herpes labialis evident; is better. Fifteen days after labour discharged well.

Jan. 21st.—Mrs. M—, æt. 29. Slight hæmorrhage after labour. Two days after labour severe face-ache. Two other patients in the hospital were seized with same symptoms on the same day; one of them is in the same ward with this patient.

Feb. 23rd.—Mrs. J—, æt. 30, weak and in bad health previous to labour; suffered much privation. Two days after labour severe rigor in the evening; excitable; breasts full. During the night more rigors and pain in the abdomen. Third day, better; has had 4 oz. brandy. Fourth, pulse 100, slight rigor; brandy, 6 oz. daily. Left hospital twenty days after labour, well.

March, April, May.—Dr. Murray in charge of the hospital.

June 9th.—Mrs. G—, æt. 30. Primipara, subject of

heart disease. On fourth day after labour had a rigor at 6 a.m.; pain in cardiac region at 8 a.m.; discharge nearly stopped; pulse 110; tongue a little furred, tremulous; dyspnœa. The usual restorative treatment ordered. Left hospital well nineteen days after labour.

June 20th.—Mrs. C—. Had rigor on day of delivery. Two days after labour a rash like that of scarlet fever appeared on neck; patient states she has had scarlet fever; tongue tremulous, glazed; takes food well. Three days after labour much milk in breasts; slight delirium for one hour. June 23rd, five days after labour, pulse 120, skin very hot. June 25th, pulse 130; tongue tremulous; appetite good (beer ordered). June 27th, profuse perspiration; tongue tremulous; is hysterical and cries a good deal; opium ordered. Left hospital twenty days after labour, well.

July 21st.—Mrs. E—, æt. 25. Nine days after labour complained of headache, feverishness, alternate hot and cold sensations; pulse 113; no appetite; lochia nearly stopped (brandy, 4 oz.). July 28th, had rigor after dinner, is now (1.45) shivering. Brandy, 6 oz. Left hospital tolerably well twenty-three days after labour. Has since had rheumatic fever. [This patient's bed was opposite that of a patient who, on July 28th, had a rash on skin like that of scarlet fever.]

July 28th.—Mrs. W—. Eight days after labour was noticed a rash like that of scarlet fever on the skin. She had previously been weak and poorly. Left hospital twenty-one days after labour, "not at all strong."

September, October, November.—Dr. Murray in charge of the hospital.

Dec. 8th.—Mrs. M—. Four days after labour had rigors and headache (6 oz. brandy). Three days later another rigor, patient crying and hysterical. Left hospital twenty days after labour, well.

Dec. 28th.—Mrs. H—, fifth labour, æt. 28. Three days after labour, pain in abdomen, coldness, no sleep at night.

29th.—Has had poultices, turpentine, &c., and is better. Pulse 120; skin hot; tongue tremulous, pale. Stimulant mixture every four hours. Brandy, 2 oz. every four hours.

30th.—Much better; pulse 100. Left hospital twenty-one days after labour, well. In same ward as following three cases.

Dec. 28th, same day.—Mrs. P—, fifth child. Three days after labour seized with pain in abdomen.

29th, mid-day.—Sickness; pulse 120; headache; cough; abdomen very tender; respiration quick; says feels very ill; pain in the joints; numbness in fingers and toes. Has had stimulant mixture and some brandy since yesterday. To have 2 oz. brandy every two hours till 10 p.m., then every four hours. A bandage applied tightly, and a turpentine fomentation over it. Same ward as preceding.

30th.—Herpes labialis observed to-day; pulse 120; is weak; pain less; discharge copious; milk in good quantity. Has taken food, medicines, and brandy as ordered. To take brandy every three hours. Left hospital twenty-one days after labour, well.

Dec. 29th.—Mrs. F—, æt. 29. Two days after labour had headache after passing a sleepless night. Pulse 110; pain in abdomen. She has had wine and brandy. Same ward.

30th.—Better; headache still.

1865, Jan. 2nd.—Six days after labour had an attack of convulsions, and was unconscious for one hour. There is little or no milk; hysterical; tongue clean; pulse 100; urine is dark coloured, scanty.

5th.—Is frequently sick; little urine; feels very weak; no appetite. Is taking about a bottle of port wine a day. Pulse 116; bowels not open for three days; no albumen in urine. Ordered compound jalap powder, with a stimulant mixture and port wine.

6th.—Cough prevents sleep. Is lying on back; abdomen

large and tympanitic, not tender. Pulse 104. Is quite rational. She has taken during last twenty-four hours one bottle port and one quarter bottle of sherry. Sickness less. To have champagne and half a grain of opium twice a day.

7th.—Much improved; pulse 84; wishes to get up.

8th.—Not so well.

9th and 10th.—Better; pulse 96. Has been taking during last three days champagne, port, and sherry in good quantity.

11th.—Pulse 84; slept well; respiration still too quick. [Has had altogether five bottles of port wine, three of brandy, and two and a half of champagne during the thirteen days she has been ill.]

13th.—Sickness troublesome.

14th.—A severe rigor for half an hour. Taking champagne, oysters, milk.

24th.—Went out of hospital twenty-eight days after labour, sufficiently well to walk down stairs.

1864, Dec. 30th.—Mrs. R—. Four days after labour. Has been in profuse perspiration last two days. Left hospital nineteen days after labour, well. In same ward as preceding.

The four patients whose cases have been just related were in one ward (No. 2 of the plan); they were delivered in the following order:—Mrs. H—, Dec. 25th; Mrs. R—, Dec. 26th; Mrs. P—, Dec. 26th; Mrs. F—, Dec. 27th.

There was no apparent cause for this outbreak of puerperal fever; the ward had been, as usual, cleansed previously, and the deliveries were conducted in the ordinary manner; but it is quite evident that the illness which attacked all four of the inmates of the ward was identical, and proceeded from the same source. In three cases the attack succumbed rapidly to treatment, in the fourth the patient hovered, as it were, between life and death for many days. It is worthy of remark, too, that the patient last delivered was the one who was most ill.

1865, Jan. 24th.—Mrs. R—, æt. 28; was delivered on Jan. 20th by craniotomy, after operation of turning; the pelvis much deformed. The extraction of the child was very difficult. There was some elevation of pulse and tenderness of abdomen during the next three days. Stimulants and good food were plentifully administered. Four days after labour, attending the formation of the milk, there was some excitement and tendency to crying out. Pulse 120; tongue clean; no abdominal tenderness. Opium and stimulants. Eight days after labour herpes appeared on the lips. Eleven days after labour convalescent. Left hospital twenty days after labour.

Jan. 30th.—Mrs. B—; three days after labour a rigor, treated in usual manner. Four ounces of brandy daily, &c. Pulse continued quick for a day or two. Milk proved insufficient for infant. Left hospital twenty days after labour, well.

Jan. 30th.—Mrs. F—, four days after labour had hysterical feverish pains in abdomen, quickness of pulse, &c. Seven days after labour pulse 100. Left hospital nineteen days after labour, quite well.

Feb. 13th.—Mrs. S—, æt. 32, reduced at the time of her labour to a state of the greatest prostration by disease of the heart and lungs. Admitted, on account of her very weak state, on Feb. 9th. Delivered, a little prematurely, on Feb. 13th. The child was seventeen inches long, very feeble, and lived only a few hours. The patient herself was sustained by frequent doses of food and rum for two days, and promised to do well. On Feb. 15th, at 11.20 p.m., the breathing became very rapid, and she died in half an hour. A considerable discharge of offensive smelling fluid was noticed about twelve hours before death.

Feb. 15th.—Mrs. A—, æt. 19, primipara. Was seized on the evening of the same day on which she was delivered with a rigor. The following day the pulse was very quick,

lochia slight in quantity, thirst, want of appetite, feeling weakness. Ordered six ounces of brandy per diem, with meat, eggs, milk, &c. Feb. 22, seven days after labour, doing well. Left hospital one month after labour, well. This patient occupied a bed next to a patient who had sustained rupture of the perinæum during labour.

Feb. 15th, same day.—Mrs. P—, æt. 36. Two days after labour had severe rigor at 7 p.m., for which brandy, &c., were given. Following day was better. Left hospital twenty days after labour, well.

Feb. 20th.—Mrs. G—, æt. 22. Four days after labour severe headache complained of. Was at once ordered brandy and stimulating diet. Three days later quite well. Left hospital sixteen days after labour, recovered.

The foregoing medical history of the hospital during a period of nine months includes only attacks or combinations of symptoms such as would be properly described under the term "puerperal fever."* Other events, of interest in other respects, are omitted. It will be for the reader to determine how far the whole of the cases here described were cases of puerperal fever. In some of them the attack was so transitory, or so slight, or so unlike a grave disease, or was so readily put an end to, that it may at first sight, perhaps, appear to be unnecessary to consider them as cases of puerperal fever at all. But looking at the identity of the symptoms in the slight cases with those present in the more marked and decisive instances—and there are some, most unquestionably, of the latter description—no reasonable doubt can be entertained that, with few exceptions, the whole number of attacks of puerperal fever was really considerable, although in but few of the patients the disease attained a high degree of severity.

The instance of the four patients occupying the same ward and simultaneously, or almost so, attacked with symptoms

* That is to say, every case presenting symptoms such as might by possibility ally it to puerperal fever.

nearly identical in all the four cases, is a typical and clear one; but there are many others in which the character of the attack identified it readily as one of puerperal fever. In some cases the simultaneous appearance of the same symptom (as headache) in two or three patients was sufficient to identify it as having a like origin. For the most part, the initial symptoms consisted in the presence of pain and tenderness of varying degrees of severity in the uterine region, quickness of pulse, and evidence of prostration of vital power shown in a languid demeanour or actual complaint of weakness; and in almost every instance the attack was ushered in by a rigor, generally well marked. The history of these nine months includes many cases in which these were the only symptoms, the attack subsiding under treatment, but, in some, further and very grave alterations were observed—very great swelling of the abdomen, intense prostration, hurried respiration, and a state bordering very closely on death. One of the four patients attacked at one time presented the disease in its worst form, but she recovered. Herpes labialis was observed in a few instances, preceded by feverishness, quick pulse, and symptoms like those of commencing puerperal fever; and what I have seen has induced me to regard it as resulting in the puerperal woman from the same cause as the more severe disease, puerperal fever. It is, indeed, a form of the latter affection. The case of one patient (Mrs. S—, æt. 32) who died on Feb. 15th, 1865, must be here alluded to. This patient expired two days after labour, of prostration, following a somewhat premature labour. It may be held with some show of reason that this patient died of puerperal fever, but this can only be admitted with very great qualification. The woman was admitted prior to her labour, and it was painfully evident to all who saw her that the chance of her recovery was very small. She died, in fact, two days after labour, the condition of the uterus being, in truth, such as would be found in bad cases of puerperal fever.

The question has been often discussed, "What is puerperal fever, and what are the causes of this affection?" In

face of the facts which observation will supply any attentive inquirer into the phenomena of this grave disease, it is impossible to escape the conclusion that it consists in nothing more or less than an introduction into the general circulating fluid of a poisonous material of animal origin—that it is a form of pyæmia, for the production of which the minutest portion of the morbific agent may prove sufficient. It is further impossible to escape the conclusion that the point at which the morbid material is introduced is, unless under certain very exceptional circumstances, either the inner surface of the uterus or the vaginal canal. The variations in respect to liability to attack appear to be connected with accidental circumstances, such as actual contagion, of which we have an instance when puerperal peritonitis follows the insertion of the finger recently employed in a post-mortem examination, or the existence of an atmosphere around the patient impregnated with effluvia of a poisonous character—instances of the latter being those severe and fatal outbreaks of puerperal fever which occur in crowded lying-in hospitals.

That puerperal fever may occur in a well-marked form and apart from such introduction from without of morbid material is undoubted, but in such cases the explanation is virtually the same—the secretions from the surface of the uterus may become fetid, and may also be absorbed, in which case we have the idiopathic disease.

The variations in respect to the effects which follow the introduction of the poison are numerous, but they are not greater than we should on *à priori* grounds expect. In one case the system vigorously resists the poison, lymph is thrown out, and inflammatory products effused; in another the patient succumbs, and we find little change in the solid tissues, the bulk of the blood itself having been the seat of action of the poison. The uterus is found larger than it should be, and the process of involution has been arrested, but nothing more may be evident. Dr. Snow Beck, in a paper read recently before this Society, has related instances where after death the uterus was found enlarged. I have repeatedly noticed

this condition of the uterus accompanying attacks of puerperal fever, and, as will be presently shown, I have for some time past treated the disease with a full appreciation of the importance of the fact in question.

We next come to the consideration of a question of great importance—the treatment of puerperal fever.

I will in the first place state briefly the method which was pursued with respect to the patients under my own care, and, I may add, with possibly some modifications, with respect to those under the care of my colleague Dr. Murray, in the British Lying-in Hospital.

As preventive measures, extreme cleanliness was strictly enforced, the windows were generally kept a little open at the top, and soiled linen at once removed. The patients were ordered a liberal diet from the first; meat was generally given on the second day; milk, beef-tea and eggs immediately after the labour. In all cases where the labour had been at all protracted, or where the patient was at the time of her falling in labour in a state of debility, a few ounces of brandy were given at once, and in many such instances four or six ounces of brandy were given daily for the first two or three days after labour. Patients in ordinary health took meat on the second day, and food of other kinds in good quantity from the time they were put to bed.

When any symptom appeared, such as headache, pain in the abdomen, quickness of pulse, tremulousness of the tongue, the case was at once treated as one of puerperal fever, without waiting for the advent of further symptoms or for the intensification of the ones already named. The measures then adopted were, with very slight modifications, the same in all instances.

In the first place, the binder, which was frequently under such circumstances found to have slipped, or to have been inefficiently applied, was ordered to be very tightly applied round the abdomen, so as to prevent accumulation of lochial discharge within the uterus; the pain was relieved by warm turpentine stupes placed under the bandage. This application of the bandage was often followed by the greatest com-

fort, the abdominal tenderness disappearing when the pressure was uniformly made. Great attention was paid subsequently to keeping up the pressure in the same way.

The patient was at once ordered to take a draught composed of thirty minims each of Tinct. Lav. co., Mist. Camph. co., Sp. Ammon. Arom., Æth. Chlor., and a little camphor mixture. This "red" mixture was given every four hours or oftener. Brandy diluted with water or mixed with yelk of egg was ordered in quantities varying according to the case. In a mild case six or eight ounces per diem would be given, but in some cases I have ordered as much as two ounces of brandy every two hours during a consecutive period of twelve hours.

Nourishment in a liquid form was generally given in good quantities. Milk and eggs were found most serviceable and most manageable. The principle followed was to administer nourishment very frequently, every half hour or so, and in small quantities at a time.

The aperient medicine ordered was limited to a small dose of castor oil or a mild saline dose. When patients presented symptoms of fever, aperients were religiously avoided, unless in cases where the rectum was known to be loaded. Experience had shown me that what is termed a brisk purgative administered a day or two after labour was not unfrequently the means of bringing on an attack of fever when surrounding circumstances predisposed to it.

When the disease was advanced or the patient had become worse, reliance was placed on a continuance of the same plan. In some cases injections containing turpentine have been thrown into the bowel, and in a few instances twenty-minim doses of the tincture of the perchloride of iron have been given internally at intervals of four hours.

The experience which I have had in the treatment of puerperal fever, both in the hospital and in private practice, has given me the greatest confidence in the efficacy of the foregoing method, in cases where the attack is promptly recognised and dealt with.

I own that I have been myself astonished in some instances

at the recovery of patients whose condition had become apparently hopeless, under the persevering and assiduous administration of stimulants and nourishment, coupled with the other measures above recommended. The first case which I treated fully and boldly on the stimulant plan was that of a poor woman, the wife of a shoemaker, who was sent out of the British Lying-in Hospital in the year 1862, suffering from puerperal fever contracted within its walls. She became worse immediately on reaching home, and for days hovered between life and death. For upwards of a week she took at the rate of a bottle of brandy in the twenty-four hours, with nourishment in proportion, and finally recovered completely. Since that time I have systematically conducted the treatment of puerperal fever in the same manner. When the disease has for two or three days, or longer, gone unchecked, lowering measures having been at the same time adopted, the plan above described will or may fail of its effect, and in consultation I have met with instances of this kind. A period arrives when the constitution is so overpowered by the disease that remedies are useless. And the important thing is to treat the affection promptly and rapidly, and to anticipate and prevent the arrival of this unmanageable stage.

There can be no question that in not a few instances an insufficient diet, both as regards quality and quantity, during the first two or three days after labour, is the cause of the puerperal fever which sets in later. This observation applies for the most part to private practice.

The question of the local treatment of the uterus itself is one of some interest. Regarding the prevention of puerperal fever, I have all along held the opinion that it is most essential to maintain the organ in a closely contracted state. The relaxation of the organ, which is sometimes the forerunner, sometimes the first symptom, of puerperal fever, I have always endeavoured to guard against by careful use of the binder, and, when necessary, by giving ergot. I have over and over again observed that when it has slipped or ceased to act properly a fresh access of the attack has

followed, coupled, doubtless, with the introduction into the uterine sinuses of fresh putrescent or semi-putrescent material, and I attach the greatest importance to this element in the treatment. I have not in the British Lying-in Hospital cases made use of intra-uterine antiseptic injections, but I believe that they are useful if carefully employed. At all events, it is the fact that they formed no part of the treatment in the foregoing instances.

Lastly, on the general question of lying-in hospitals a few remarks may not be misplaced. I hold the opinion, an opinion based on practical experience, that, as heretofore constructed and arranged, lying-in hospitals are open to the fatal objection that it is next to impossible to prevent entirely the occurrence within them of puerperal fever.

In the British Lying-in Hospital, during my connexion with it, the mortality was, for a lying-in hospital, very low. When the admissions were restricted within certain limits, this restriction, coupled with great attention to the sanitary state of the patients, and, it must be added, with the aid of the restorative treatment applied at the very commencement of any suspicious symptoms—under these circumstances the mortality was almost *nil*. But when the admissions were increased in number these precautions were no longer sufficient to secure absolute immunity from fatal attacks. This fact justified the precautions as regards isolation of the different wards from each other, and diminishing the number of patients in each ward, which had been insisted on, though with much opposition on the part of certain members of the board of management, by Dr. Murray and myself; but I think the further conclusion must be drawn, in view of the facts now related, that individual isolation must be carried out if the liability to puerperal fever is to be avoided.

Something must be allowed, in any estimate as to the influence of any lying-in hospital on the mortality of its patients, for the fact that not a few of the patients are brought to the institution because there is something unusual in the case—on account of extreme debility from other associated diseases, on account of malformations of the pelvis, &c.

These patients are necessarily less favorable subjects for the advent of labour than others. This fact, however, is in a great degree met by another, for there can be no doubt that to bring a patient already predisposed to disease into contact with an atmosphere containing, possibly, elements capable of generating puerperal fever, is not exactly the course most likely to be productive of benefit to the patient. If isolation be necessary for healthy patients, it appears to me to be doubly necessary for those whose natural forces are already weakened and diminished.

Further, in view of the fact that puerperal fever is notoriously liable to be propagated from one patient to another by means of the individual whose business it is to conduct the labour, or by the nurse who has subsequently to wash and look after the patient, this makes it necessary that, in addition to isolation of the patients, a certain degree of isolation be enforced as regards the attendants. It appears probable that one of the most frequent causes of the spread of puerperal fever in lying-in hospitals has been want of attention in this particular. The deadly influence exercised by hands contaminated in the post-mortem or dissecting room on the puerperal woman has been too well illustrated in some of the continental hospitals to need further comment in this place.

It appears to follow, as a corollary from all that has been stated, that lying-in institutions can only be safe when the conditions are made to resemble as much as possible those present in private practice, where the patient, being duly isolated, can only exercise an injurious influence on herself, so to speak, and where, should changes favouring the occurrence of pyæmia occur, the products of such changes may not spread or be conveyed to other puerperal women.

I have endeavoured in the foregoing remarks on puerperal fever at the British Lying-in Hospital to describe faithfully and accurately the facts which have fallen under my notice. I regret that time does not permit me to enter on further details or to supply further facts, but I trust that, as a contribution to the history of a disease most dreaded by

obstetric practitioners, this essay may, though imperfect in many ways, receive the indulgent consideration of my hearers.

Dr. Snow Beck remarked that a paper which professed to rest upon the cases recorded could with difficulty be discussed without an opportunity of examining those cases. Those which had been read were most unsatisfactory, and none presented the diagnostic signs of puerperal fever. Whilst cases from which deductions were drawn should be recorded with such accuracy and care in detail as to enable any one to say whether they were trustworthy or not. The only symptom in one of the cases was "excessive vomiting," which was considered sufficient to stamp it as puerperal fever, and to necessitate the excessive use of stimulants—a bottle of port wine, or sixteen or eighteen ounces of brandy, besides champagne, in the twenty-four hours. In another the symptoms recorded were headache, abdominal pain, heat of skin, and quick pulse. The headache was unfortunate, as one of the singular results of puerperal fever was the absence of pain in the head, with the mind remarkably clear and distinct: abdominal pain, but where was it situated, what was its character, its degrees, seated in the skin, muscles or deeper parts?—heat of skin was unusual, as the skin was colder than natural, frequently moist and clammy. He had seen all these symptoms mentioned in rheumatism of the abdominal muscles, which was not unusual after a prolonged or severe labour: also in constipation of the bowels where aperients, given with care, ended in copious fæcal evacuations and the disappearance of all troubles. Nothing could be more absurd than bringing forward such cases as these upon which to found general conclusions as to the cause, the nature, and treatment of puerperal fever, or as evidences of the necessity of the excessive use of stimulants. Again, cases of heart disease, phthisis, pneumonia, &c., were put down as puerperal affections; what relation, except as accidental complications, had these to the pregnancy or labour? Dr. Beck had been mentioned as having shown to the Society cases of enlarged or relaxed uterus as connected with this disease, but he would have been ashamed if he had done so, seeing this relation had been well known 100 years ago. What he did show was that the sinuses were pervious throughout to fluids gently injected into the pelvic veins, and even this had been shown many years ago by Dance, when injecting the veins. The pervious state of the sinuses was important, as it was of little use the open orifices being bathed in the sanious fluids if the sinuses were not open to allow the fluid to enter the general system. There were no facts, so far as he was aware, to show that deleterious infection took place from

the surface of the vagina, or the general surface of the uterine cavity. And he believed that the distinguished Professor who originated the idea that this disease was caused by particles of matter adhering to the fingers after dissecting or post-mortem examinations, had found, by further experience, that this could not be maintained. The treatment by the excessive use of stimulants need not be discussed, as the cases brought forward could not be said to be marked examples of puerperal fever, if, indeed, they were puerperal fever at all. In all cases where he had seen this adopted it had been decidedly injurious, and the most successful had been the administration of those substances which counteracted the effects of the injurious impregnation—the Sulphites, &c., as well as washing out the interior of the uterus so as to remove, as much as possible, all injurious matters from it. On concluding, Dr. Beck inquired whether it was possible to obtain further information respecting the cases of death which had occurred in the Nightingale Ward at King's College Hospital, as only the results had been given, whilst the cases themselves might afford information very desirable to record. At present he doubted the explanation as to the cause of the great mortality, especially after the further experience at Vienna already mentioned.

Mr. W. Squire said, though the experience of Lying-in Hospitals was unduly large in the class of cases brought forward by Dr. Hewitt, it had its use in showing the kind of treatment likely to be successful.

There is a close relationship between hospital gangrene, diphtheria, erysipelas and puerperal fever, and in diseases of this kind where a septic influence is traceable, the sustaining system of treatment with stimulants throughout, and the use of such remedies as iron and quinine was the right one; this is illustrated in these cases, all of which resulted in recovery; that they were cases of this kind, if their history and the details given by Dr. Hewitt were not enough, his own judgment and experience sufficed to distinguish them from the ordinary accidents of the puerperal state, such as constipation.

Dr. Playfair said that he would have much pleasure in answering Dr. Snow Beck's question as to the Nightingale Ward.

If he understood Dr. Beck rightly he argued that because students dissecting and attending the post-mortem theatre were requested not to enter the lying-in ward, and that puerperal fever still appeared, we might conclude that there was no reason to suppose that septic matter had been conveyed from without.

Now, the prohibition of such students entering the wards was a mere precautionary measure, and no one had ever even suggested that they had been the means of conveying contagion.

In fact, the women were invariably delivered by midwives, under the superintendence of the resident accoucheur and matron, and no case had ever been attended by a student. Dr. Playfair could only say that he fully concurred in the view which attributed the mortality to the poisoned air of a general hospital, and had on a former occasion pointed out how the position of the ward caused it to act as a receptacle not only for the emanations of the surgical wards below, but also of the post-mortem theatre which was situated at the bottom of the back staircase.

How, in the face of the evidence, any one could have the slightest doubt as to the cause of the mortality, he could not possibly understand. The fact that the outbreaks of puerperal fever coincided with the presence of erysipelas in two surgical wards, and that the women who died had no symptoms of erysipelas as such, while one of the children in the ward suffering from an abrasion of the skin had well-marked erysipelas, seemed of itself sufficiently to controvert Dr. Snow Beck's theory as to the diseases having no connection with each other.

Dr. Braxton Hicks wished to asked Dr. Snow Beck whether he called only the endogenetic form of Puerperal disease by the name of Puerperal Fever. He having answered in the affirmative,

Dr. Hicks said it was not more difficult to understand that if the system be poisoned by matter engendered within, the same matter introduced from without could also produce the same symptoms. If puerperal fever were to be so limited then it was highly important that researches should be made as to the connection of the various diseases classed as puerperal fever. For his part he had seen abundant personal evidence, at least as strong as any admitted valid in medicine, to show the connection of these diseases. He had no doubt but that many could be collected from others.

The President, having so recently expressed his views on the subject of puerperal fever, would now only very briefly reiterate his conclusions. There should be no doubt whatever that it was a highly contagious disorder; that it was communicable to a puerperal patient not only through its own contagious emanations, but through those from scarlet fever, measles, typhus, erysipelas. The identity of the disease with erysipelas in some epidemics had been proved by our first President the late Dr. Rigby from his experience at the General Lying-in Hospital of this city, and by Dr. Gordon, of Aberdeen, as well as by others who had enjoyed similar opportunities. Dr. Rigby observed in one severe epidemic that the infant of every patient who had died of puerperal fever perished from erysipelas. Various sources of putrid emanations, viz., the putrid lochia, especially of women congregated in hospitals, gases from open sewers, putrid matters from dissections and from hospital sores, had been

rife causes of that very fatal disease. The paper, while showing that some little good might be done by an early and judiciously energetic supporting treatment, in some cases of the fever, at the same time furnished additional evidence of the dangers to puerperal women in lying-in hospitals proceeding from the great prevalence of this disease in such institutions.

Dr. Graily Hewitt in reply stated that the greater part of Dr. Beck's observations and criticisms on the paper appeared to be founded on an entire misapprehension of the facts and statements therein. The facts were before the Society, and it was for them to draw conclusions as to their import and value. The cases must be read in full before they could be properly criticised. Other objections had been met by the succeeding speakers, and in conclusion he thanked the Society for their attention to the paper.

MAY 6th, 1868.

John Hall Davis, M.D., President, in the Chair.

Present—45 Fellows and 11 Visitors.

Dr. Hope Robson and Mr. Fred. T. Coates were admitted Fellows of the Society.

Dr. William Leslie, of Dorchester, and Mr. John Sutton Sams, of Lee, Kent, were elected Fellows of the Society.

Dr. Greenhalgh exhibited an Elastic Spring Pessary which he had invented for the cure of retroversion of the uterus. It resembled a Hodge's pessary, and could be easily bent to any shape; it differed, however, from that contrivance in having a spring at its upper and a piece of india-rubber tubing at its lower extremity. It was easier of introduction and removal than a Hodge's pessary; it could be more perfectly adjusted; it occasioned little or no inconvenience, and was inexpensive. In two cases of sub-acute metritis with retroversion, in one of which the ovary was inflamed and highly sensitive, this pessary gave great relief by placing the soft elastic tubing uppermost, when the hard extremity of a Hodge's pessary occasioned so much suffering that it had to be shortly withdrawn.

Dr. Graily Hewitt had used for a long time a modification of Hodge's pessary where the fundus was very sensitive. By thickening the upper part of the instrument to about the size of the little finger, its pressure was well borne.

The President thought very highly of Hodge's pessary, and, in its different gradations of size, he very frequently used it in descent of the uterus, with or without retroflexion.

Dr. Wynn Williams exhibited a mass of Hydatiform

Vesicles attached to what appeared to be a portion of placenta or blighted ovum, together with hardened masses of blood. The specimen was referred to a committee consisting of Dr. Braxton Hicks and Dr. Wynn Williams.

Dr. Rogers exhibited two large fleshy masses forming one Polypoid Tumour of the uterus, which he had removed by two operations at an interval of two days. The patient had done well.

Dr. Marshall, of Dover, showed a photograph of a child born with an amputated arm.

Dr. Rasch exhibited a Fœtus and Placenta, apparently of about five months, in which the umbilical cord was completely obliterated by twisting. Close to the navel of the fœtus, the funis had the appearance of firmly twisted thin cord of the thickness of a crowquill.

Dr. Rasch also exhibited a Vaginal Drainer, which he had contrived to prevent the wetting of the bed while injecting the vagina. The instrument is an adaptation of a common speculum, made of ebonite. To expose to the fluid injected as much of the vagina as possible, this speculum is considerably shorter and bevelled off at the vaginal end, which also facilitates introduction. The brim is rather wider than in a common speculum, and covered in front by a sort of diaphragm, leaving a hole for the introduction of the tube of the injecting apparatus. The brim is perforated below by a short pipe, to which an elastic tube can be fixed, through which the injected fluid flows out into any convenient receptacle. With the douche the author had introduced to the Society on a previous occasion, and this drainer, irrigation of the cervix and vagina, or uterus, if desired, can be made for any length of time without interruption, and without trouble to the attendant or disturbance to the patient. By compressing the tube of the douche when once filled, and transferring the metal end from the vessel

containing water to a vessel containing any medicated fluid, any desired quantity of the latter, however small, may be used as an injection. Both instruments are made by Mr. Jackson, 25, City Road.

Dr. WILTSHIRE, while complimenting the author, suggested that it would be advisable to coat the metal end of the douche with vulcanite, to prevent the action upon it of the medicated solutions.

The PRESIDENT considered that Dr. Rasch's invention would prove of great advantage, in many cases, and expressed his intention of making trial of it on the first suitable occasion.

POCKET CHLOROFORM INHALER.

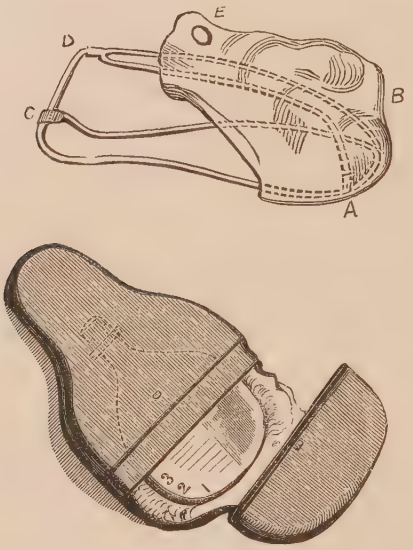
By Dr. JOHN MURRAY.

NUMEROUS as chloroform-inhalers are, strange to say, there appear to be none offering simplicity with compatibility, and at the same time safety in their use. The simplest means of administering chloroform is by the pocket-handkerchief, but it entails great waste of chloroform; there is unequal and uncertain evaporation from its surface, and in addition it is clumsy and unmanageable during the struggles of the patient.

It was with the object of alleviating what I thought to be the deficiencies of the pocket-handkerchief that I got this inhaler made. It is composed of a properly shaped framework of very strong wire, which is furnished with joints, A B C, and a simple socket, D, which admit of its being folded almost flat. Over the framework a cover made of fine flannel, or, better still, thick and closely manufactured cotton cloth, is drawn. It is reflected at E to show the skeleton of the instrument. The centre-piece of the cover is several plaits thick, to allow of the absorption of a certain quantity of chloroform and as equable and proper evaporation as pos-

sible. The anæsthetic is poured into and upon the thick part of the inhaler in quantities of from half a drachm to a drachm. The practice adopted of dropping the chloroform upon the inhaler is, I think, unsafe, as both hands are

Fig. 2.



occupied with the inhaler and bottle, and thus proper attention diverted from the pulse, which should be constantly watched. A small aperture is made to enable the administrator to regulate with his finger the amount of air to be admitted. This, however, is of little moment, as air can be allowed to enter at the side of the instrument. A flat and graduated bottle suited for the waistcoat pocket, and capable of holding about an ounce and a half of chloroform, accompanies the inhaler, and the whole fits into a case which can be conveniently carried in the breast pocket. It is made at a moderate price by Mayer and Meltzer, of Great Portland Street.

I have now administered chloroform in this manner very frequently at the Middlesex Hospital and in private, and,

with the exception of Mr. Clover's admirable apparatus, have obtained no more satisfactory results from any of the complicated and expensive instruments now in use than by this simple means.

CASE OF RUPTURED UTERUS.

By Henry M. Madge, M.D.

Mrs. M—, æt. 42, of good general health and stout, healthy appearance; married about twenty years ago, and had nine children during the first thirteen years of her married life. Labours always tedious, resulting, in three instances, in stillborn children. Up to the time of her last pregnancy had not been pregnant for seven years.

I was first summoned to see the patient on Saturday evening, December 21st, 1867. I found her sitting up, in good health and spirits, and labour pains coming on about every quarter of an hour. The labour was said to have commenced two hours earlier in the evening. Being told that the water was constantly dribbling away, I made an examination and found the head presenting, but high up; os uteri about the size of a shilling, and liquor amnii partially escaped. At 11 o'clock that night I visited the patient again; the pains were then getting stronger and more frequent; os uteri more dilated; head still high and resting on pelvic brim. I remained with the patient until 2 o'clock a.m. During this time the head had made only a slight advance; pains rather irregular, sometimes frequent and strong, then feebler and at longer intervals. In one of these quiet intervals, finding that the labour was making little actual progress and that the patient was getting fatigued, I gave her Tinct. Opii ʒss and left her in charge of the nurse. At this time, beyond the fear arising from the patient's previous history that the labour would be a

tedious one, I had no apprehensions whatever as to her safety.

The next morning, being a good deal occupied, I did not visit the patient until I was sent for, which was about 11 a.m. I found the aspect of affairs quite changed; the patient's countenance wore a look of anxiety; breathing a little laboured; pulse quick and feeble; extremities cold, and she said she felt very weak and ill. The nurse told me that the pains had continued up to 5 o'clock much the same as when I left her. At 5 o'clock the patient began to doze a little, and from that time there had been no real labour pains. There was no history of abrupt termination of the pains, no shock, nor collapse, nor sickness. She had taken her breakfast and conversed with her husband and friends during the morning as usual, but for the last hour or so, without being in pain and without any apparent cause, she appeared to be gradually losing strength. On examination I found the os uteri pretty fully dilated, the head somewhat lower but still arrested at the brim, the presenting part being covered by a scalp tumour. My first impression was that the symptoms were those of ordinary exhaustion coming on, caused in part by some amount of internal hæmorrhage, and that by giving nourishment and stimulants pretty freely strength might be restored and uterine pains reproduced. I therefore ordered egg and brandy to be given every half hour, and with the view of using the forceps on my return, after a short interval, I also ordered an enema of gruel to be administered. I saw the patient again about 12 o'clock, and I was then somewhat astonished to find that she had been able and that she had been allowed by the nurse to get up and walk without assistance into an adjoining room for the purpose of using the night commode. The bowels were freely relieved, and it appears that whilst sitting and straining on the commode she felt something give way in the abdomen, which was followed by a fixed pain in the hypogastric region—a pain unlike anything she had felt before. She was able, however, with a little assistance to walk back to

bed. On my arrival she was in a very exhausted state; voice altered; pulse feeble and irregular; face cold and clammy; lips purplish; extremities quite cold. Being a very stout person, with thick abdominal walls, it was impossible at this time to make out anything with certainty by an external examination. I feared, however, that some important lesion of the uterus had taken place, and immediately procured the assistance of Dr. Hall Davis, who, on his arrival, expressed the same apprehension. The patient, however, having in the mean time taken a good deal of brandy and somewhat rallied, Dr. Davis determined on delivering her forthwith. Finding that the forceps could not be properly applied, craniotomy was determined upon. On proceeding, however, to that operation, notwithstanding the external pressure made on the abdomen, the child's head was found moveable and receded into the abdominal cavity, hence it became necessary to effect delivery by turning. With the exception that after the turning there was some little delay in bringing the head through the evidently somewhat contracted brim of the pelvis, the operation was performed without difficulty. The placenta soon followed, and externally there was very little appearance of blood. On passing the hand per vaginam after delivery it came directly in contact with the abdominal viscera. The posterior wall of the uterus and upper part of the vagina posteriorly were found to have suffered laceration. The fundus uteri, on abdominal examination, was felt to extend above the umbilicus, the emptied uterus having been displaced upwards by the pressure of the child's body. The patient, as was expected, never rallied, and died in an hour after delivery. The child, which was well formed and of full size, had been dead apparently for several days.

A post-mortem examination was sought, but not allowed.

Remarks.—As Dr. Hall Davis, who kindly came at once to my assistance in this unfortunate case, will probably make some comments on it, I will merely remark as conclusions from the brief history of it that I have given—

1stly. That the symptoms of ruptured uterus are not

always so well marked as descriptions in books might lead us to expect.

2ndly. That in this instance the injury was probably partially effected some hours before delivery, and was made more complete by the straining efforts at stool.

3rdly. It is probable, also, that some degree of contraction of the brim of the pelvis was an element contributing to the accident.

4thly. That as the labour was not a protracted one the cause of the rupture was inherent weakness, probably degeneration, of the uterine tissues, and as this condition could not be known beforehand, the unfortunate result was inevitable.

Dr. Barnes said that this case afforded another proof that a dead child was an efficient cause of rupture of the uterus. He believed it was best, if the child was still in the uterus, and were felt presenting through a dilated os at the brim, to deliver by forceps or by turning. Gastrotomy was especially indicated when the fœtus had escaped into the abdominal cavity.

Mr. Spencer Wells said that, as the results of turning or other modes of removing the child through the vagina in cases of ruptured uterus were so generally fatal, he hoped Fellows of that Society would be prepared to try whether better results might not be obtained by a sort of Cæsarean section, performed with every possible precaution, carefully cleansing the peritoneum from all blood, and closing the opening in the uterine wall by sutures.

The President was disposed to suspect that, in Dr. Madge's case, a limited laceration of the uterus immediately preceded the first attack of collapse; and that the rent was enlarged when the patient sat on the night chair. As to the Cæsarean section, no good could possibly have resulted from it; its performance would have aggravated the feelings of distress in the family, and it was contraindicated by the state of the patient. He believed that, had the post-mortem examination been permitted, degeneration of the tissues at the seat of laceration would probably have been discovered.

Dr. Snow Beck regretted that a post-mortem examination had not been allowed. He believed that in cases of ruptured uterus some change, either from fatty degeneration or want of due development, existed, and was the chief cause of the giving way of the uterine tissue. The presence of a dead child appeared to be only an accidental occurrence. One frequent cause of lacera-

tion was repeated straining to overcome some obstruction, but a dead child was more easily moulded and passed through an obstructing cause than a living one.

Dr. Greenhalgh had, in two cases, been able to confirm, by microscopic investigation, the presence of disease in the uterine walls. In no case had he seen laceration of the uterus occur in a primipara, but in nearly all the cases he had witnessed, the patients were fat and of lax fibre, and had had many labours at short intervals. He agreed that the death of the fœtus *in utèro* was an occasional cause of pathological changes.

Dr. Graily Hewitt thought that an important cause of rupture had not been mentioned; viz., excessive tenuity of the uterine walls at some situations. A sharply projecting sacral promontory would readily produce rupture if a thin part of the uterine wall became opposed to it. He believed that pelvic distortion was not an uncommon cause of ruptured uterus.

Dr. Rasch drew attention to a paper by Professor Klob, in which it was shown that perimetritis, like pericarditis, gave rise to degeneration of the subjacent tissue. In several cases of spontaneous rupture of the uterus, there were adhesions showing past perimetritis and a rind-of-bacon-like thick layer of hard inelastic tissue, consisting principally of connective tissue fibres, the muscular fibres decreasing, and at last completely disappearing as the external surface was approached.

Dr. Madge said that there was sufficient in the history of this case to prove that the rupture was due to a diseased or softened condition of the uterus. The small and irregular amount of uterine action, and the subsequent condition of the patient, showed that from the first there was something faulty in the state of the uterus. Somewhat similar conditions are frequently met with in which labour-pains, after remaining for a time in abeyance, become re-established, and the case does well. The case belonged to quite a different class to that in which a healthy uterus gives way after severe and fruitless efforts lasting over many hours. When uterine action is regular and combined and no progress made, the accident might be averted by timely interference. In the case related the symptoms were very obscure, and tended to support the opinion of Dr. Radford and others, that ruptured uterus is caused by a thinning or softening of the uterine walls.

ON THE ABSORPTION OF FIBROID TUMOURS OF THE UTERUS.

By W. S. Playfair, M.D., M.R.C.P.,
ASSISTANT OBSTETRIC PHYSICIAN TO KING'S COLLEGE HOSPITAL.

That fibroid tumours of the uterus do occasionally atrophy and disappear is a fact which has been observed by more than one writer on the subject, and several interesting cases of the kind may be met with scattered through obstetrical literature.

But comparatively little attention has been paid to this termination of fibroid tumours, which is in itself so interesting, and so well worthy of careful study, from the possible influence it may come to have in the treatment of the disease, that it is much to be desired that every well authenticated case of the kind may be recorded. I feel, therefore, that I need scarcely apologise to the Society for laying before it brief notes of two instances of the complete disappearance of fibroid tumours that have come under my own observation.

Before doing so, however, I would venture to refer very briefly to the cases of the kind that have already been published, and to the opinions of authors as to their nature.

Dr. West, in his standard work on 'Female Diseases,' enumerates the various modes in which nature sometimes effects the cure of uterine fibroids.

1st. By the spontaneous detachment of the growth from its attachment to the uterine walls.

2nd. By ulceration of the capsule, and the subsequent enucleation of the tumour.

3rd. By disintegration of its substance, and its removal piecemeal.

4th. By cretification.

The third of these is the only heading under which the spontaneous absorption I am alluding to can possibly be placed; but Dr. West is evidently here speaking of the death of the tumour *en masse*, and its subsequent expulsion, and not of its gradual removal, unaccompanied by any appreciable change in texture. He describes the growths as softening, and changing into a dirty putrilage, which subsequently comes away in shreds; and he distinctly states his impression that "softening and disintegration usually precede the removal of the tumour, and that almost invariably it is not absorbed, but is expelled in its softened state, and piecemeal from the cavity of the womb."

Clark, McClintock, Graily Hewitt, and other writers, have made a mere passing allusion to the occasional absorption of fibroid tumours, but evidently consider it to be an event of such extreme rarity as scarcely to merit much attention.

The number of recorded cases in which such tumours, even of large size, have completely disappeared, sometimes when treatment was being pursued, sometimes apparently quite spontaneously, is, however, so large, that it is certain the occurrence is not so very uncommon as has been supposed.

A brief reference to a few of the most remarkable cases that have been published will sufficiently prove this.

Thus, McClintock mentions the case of a young woman, twenty-eight years of age, who suffered severely from uterine hæmorrhage, and had a fibroid tumour the size of an orange. She was treated by the chloride of calcium, and by iron, which she took for two years; at the end of that time no trace of the tumour could be detected.

Sir Charles Clarke describes the case of a woman who had a tumour the size of a child's head. A variety of treatment was adopted, and when seen at the end of two years the tumour had entirely disappeared.

Dr. Rigby relates a still more curious case, that of a patient in whom two tumours, the size of a child's head,

could readily be felt through the abdomen, and which had entirely vanished a month afterwards.

But the most remarkable collection of cases is that of Dr. Ashwell, who, in February, 1854, published a paper in the 'Lancet,' "On the Diminution and Disappearance of Fibroid Tumours." He relates four cases which were very briefly as follows:

Case 1.—A woman, forty-eight years of age when first seen. The tumour was the size of an adult head. In the course of four years no trace of it could be detected.

Case 2.—In May, 1837, the patient had a tumour the size of a child's head. When seen in 1853 it had vanished, and she herself had not felt or observed it since 1849. This patient was also forty-eight years of age.

Case 3.—Age forty-six. Tumour the size of a fœtal head. Four years afterwards it had entirely disappeared.

Case 4.—Age forty. Tumour the size of an adult head when seen in November. In the February following it could not be detected.

These very remarkable and interesting cases were brought forward by Ashwell in support of his views as to treatment, and he was inclined to attribute the disappearance of the tumour solely to the prolonged use of iodine. That this is sufficient to account for the occurrence is more than doubtful. Very possibly the medicinal treatment had something to do as an auxiliary, but, in these particular instances, it seems to be more probable that the atrophy was connected with the age of the patient, as they all happened about the period of the cessation of menstruation, the probable influence of which I shall presently advert to.

It is needless to multiply examples.[1] Those I have

[1] Since the above was written I have observed the description of a very interesting case, to which it may be worth while to refer. This is the more

brought forward are sufficient to prove that such disappearance of these growths cannot be so very rare. I believe that the experience of those who see many cases of uterine disease will bear out this opinion, and I have heard, from several practitioners, of cases of a like nature that have come under their observation.

Before alluding to the probable mode in which this atrophy has been brought about, I shall relate the cases that I have myself witnessed.

Case 1.—C. S—, æt. 22, married, and the mother of three children, came under my care as an out-door patient of King's College Hospital on the 20th of November, 1865.

She is subject to peculiar fits of dizziness, coming on very frequently, and induced by the slightest excitement. These first showed themselves during her first pregnancy, disappearing after the birth of her child. They again came on during her second pregnancy, and, in like manner, disappeared after delivery.

On becoming pregnant for the third time they recurred as usual, but did not disappear as before, and for the last five years she has had them constantly. They now recur very frequently, always once, and sometimes twice a day. They are evidently a form of the *petit mal*, and on one or

valuable as evidence since the name of the obstetrician who describes it is of itself a guarantee as to the accuracy of the diagnosis, and because he himself was formerly a sceptic as to the possibility of spontaneous absorption. The case is detailed by Dr. Matthews Duncan in his valuable paper on "Hæmorrhage from Fibrous Tumours of the Uterus" ('Edin. Med. Journ.,' January, 1867). He observes with regard to it,—"I have been, as it were, forced against my judgment, by the evidence of a single very remarkable case, to admit the possibility of the complete removal of a large fibrous tumour by absorption. The tumour was as large as the fœtal head at the end of pregnancy. It was as easily and perfectly diagnosed as any case could be. There was no doubt ever thrown on the nature of the case by any of the experienced practitioners who examined it. It had every character and symptom of a fibrous tumour. The patient was long in a most aggravated state of anæmia. Now there is as certainly no uterine tumour as there was one formerly."

two occasions have shown the character of the fully-developed epileptic paroxysm. She suffers also from bearing down pains in the back, and habitually menstruates very profusely. The periods return every three weeks, lasting nearly a week, and accompanied by the discharge of large clots.

On vaginal examination a firm globular fibroid tumour, the size of a large orange, could be very distinctly made out, attached behind and to the right side of the uterus.

It is useless to detail the patient's case, although very interesting in itself. It will suffice to say that she was for a long period treated by the use of spinal ice-bags and large doses of bromide of potassium. This drug was administered for the fits, and without reference to the tumour, which gave her little trouble, although it was doubtless the cause of the hæmorrhage from which she suffered. She remained for some six months under treatment, from which she derived much benefit, the fits eventually completely disappearing.

I lost sight of this patient until July in the subsequent year, when she again presented herself with similar head symptoms, the return of which she attributed to mental distress connected with the illness and death of her mother. The menstruation was now perfectly regular, both as to recurrence and amount. The most careful and prolonged examination failed to enable me to detect any trace of the tumour which had formerly been so frequently felt.

Case 2.—The second case is more interesting. It occurred in a married woman, thirty-five years of age, the mother of three children, who came under my care in February, 1867.

She was suffering from very profuse metrorrhagia, occurring at irregular intervals, with seldom more than a week between the attacks. She had suffered more or less in this way for some years, but of late her symptoms had been steadily increasing in severity, and she was reduced to a state of extreme anæmia from hæmorrhage.

On vaginal examination the cavity of the pelvis was found to be occupied by a large nodular mass of uterine fibroid, principally attached to the right side of the uterus, but also occupying Douglas's space, which could be felt through the abdomen, and was apparently about the size of an adult head. The uterus itself was pushed up behind the symphyses pubes.

After she had been under my care for a short time I made an attempt to pass the uterine sound, to measure the length of the cavity of the womb. I found, however, that the tumour projected so much into the cavity that I could not pass the instrument. A few days afterwards she returned, complaining of intense pain in the abdomen, with a flushed countenance, and a pulse of 120.

On examination the vagina was found to be hot and swollen, the uterus and its accompanying growths were quite fixed, and so much exudation had been thrown out that the nodules, so distinctly to be felt previously, were no longer to be made out. It was evident that the patient was suffering from an acute inflammatory attack, brought on by the introduction of the sound. I may say that the instrument had been used with the utmost gentleness, and that the unfortunate result in this case affords a further proof of the extreme caution with which the sound should always be used.

Mrs. L— was now admitted (March 8th) as an indoor patient under my colleague, Dr. Priestley, who recognised the condition of things I have described.

The inflammatory attack ran its usual course, and on the 7th of April there was a copious discharge of pus from the vagina, amounting to about half a pint. After this the patient continued to improve, and was discharged on the 19th of the same month at her own request. I find it noted that there was still a slight escape of pus from the vagina, which was hard and brawny. The site of exit could not be detected, and the tumours were much in the same condition as formerly.

On January the 8th, 1868, that is, about eight months afterwards, I again saw her. The uterus was then in its natural position in the pelvis, and freely moveable. No trace of the fibroid tumours could be felt, and the only unnatural condition I could make out was an indefinite sense of thickening in the right broad ligament. Menstruation had of late been regular, and normal as to quantity. Her general health was better than it had been for years.

In the former of these cases it may be questioned how much of the cure could be attributed to the treatment pursued. The patient had been taking the bromide of potassium steadily for a long period, and I have now seen so many cases in which a prolonged exhibition of this drug in sufficient doses has given great relief to patients suffering from fibroid tumours, and in which its use has been followed by diminution of the growth, that I can have no doubt of its occasional efficacy in promoting absorption. Whether it is of itself sufficient to induce the complete disappearance of the tumour is, however, very questionable. Nor is its *modus operandi* clear. Whether it acts as a direct absorbent, or only indirectly by its undoubted sedative action on the uterine system, is a question requiring more detailed observations than we now possess to determine.

No such agency was, however, in operation in the second case. Here the immediate determining cause of absorption was clearly the inflammatory attack from which the patient suffered. This could not have acted in the way Dr. West suggests, by directly breaking up the fibroid masses, and leading to their expulsion as *débris*, for no such discharge was noticed; and when the patient left the hospital the tumours had not diminished in size. The probable explanation is that the inflammatory attack gave rise to such changes in the intimate structure of the growth as to place it in the most favorable state for a slow and gradual alteration of texture, leading to its eventual disappearance.

It would be of the utmost importance if we could deter-

mine what these changes were, for such knowledge might, in time, lead to a method of treatment tending to produce them.

The structure of the growths will probably give the key to the problem. There can be no question that the structure of fibroid growths bears the closest resemblance to that of the uterus, which is their seat, the main element in them being organic muscular fibres similar to those in the uterus.

It is probable, therefore, that their atrophy may depend on causes similar to those which effect the diminution in bulk of the uterine tissue itself, when it has been hypertrophied during pregnancy, and that we know to be by a process of fatty degeneration of its fibres. Indeed, the rapid diminution in bulk of the uterine tissue while post-mortem involution is going on is almost the only analogous instance we can point to in the whole body of the complete disappearance of such large masses of organized textures. Taking, therefore, into consideration their recognised similarity in structure, it is surely a reasonable and fair inference that their atrophy may be effected by similar agencies.

This similarity may of itself suffice for an answer to those who argue against the possibility of the disappearance of fibroid tumours, from the fact that tumours in other parts of the body are never known to vanish in the same complete way.

We know also that fatty transformations are not unknown in fibroid tumours, an instance of which was exhibited by Dr. Graily Hewitt at the Pathological Society,[1] in which cysts developed in the interior of a fibroid tumour were found to contain masses of fat. It is probable that a careful series of microscopical examinations would, in many tumours, show molecular fatty degenerations in the separate fibres, similar to that which takes place in the uterus itself.

Other theories have been suggested to account for the disappearance of the tumours.

[1] 'Pathological Transactions,' vol. xi, p. 173.

Thus, McClintock is of opinion that their occasional diminution in size is due to the absorption of fluid infiltrated between the fibres.[1] This, however, can operate only to a very limited extent, and may suffice to account for some of those cases in which, after treatment, the patient feels lighter and easier, and the tumour seems to be smaller. But it is clearly insufficient to explain any case in which the tumour entirely disappears.

Another theory has been suggested by Mr. Spencer Wells.[2] He believes that the chloride of calcium is of great value in inducing atrophy of these growths, and Dr. McClintock is of the same opinion.[3] He attributes its action to its producing a calcareous degeneration of the nutrient arteries of the tumour, thus eventually leading to its cretification and subsequent atrophy.

This theory seems a plausible one, and very possibly may be correct, in so far as it accounts for the occasional calcareous degeneration of tumours. Such alterations in texture are not very uncommon, and are not infrequently associated with marked atheromatous changes in the arteries of the body generally, an example of which may be seen in the museum of the College of Surgeons. But cretification never leads to the *disappearance* of the tumours, except in a few rare cases in which they are expelled *en masse*. It tends rather to their shrivelling up, and becoming inactive, so that the more prominent symptoms, more especially hæmorrhage, are no longer observed, while the tumours themselves remain not very much diminished in size. This is very different from the gradual and complete absorption and disappearance I have described above, so that Mr. Wells's theory may be taken as referring to an entirely different category of cases.

It is very probable that the cessation of menstruation, and the physiological atrophy of the uterine organs consequent on that event, has a powerful influence in inducing

[1] 'Clinical Memoirs on Diseases of Women,' p. 114.

[2] 'British Medical Journal,' January 18th, 1868.

[3] Op. cit., p. 141.

absorption. It is a very common observation, that not only do the formidable symptoms of fibroid tumours disappear after this period, but that they diminish in size as well, and possibly more extended inquiry may prove their occasional entire disappearance in this way. It seems to me that Dr. Ashwell's cases are probably explicable in this manner, since they all occurred in patients more than forty years of age.

Another condition which would seem to favour absorption is the natural involution of the uterus after delivery. If the theory above stated be true, there could be no circumstances under which it would be more likely to happen, since the removal of the tumour would then be effected by an exaggeration of the changes naturally going on in the uterus. Accurate observations on the effect of delivery in cases of uterine fibroids would be interesting in reference to this point.

Dr. Barnes said no doubt all would join in the hope that remedies would be found capable of causing the removal of fibroid tumours, but he could not see that Dr. Playfair's cases afforded any proof that such remedies had been found. He himself had used bromide and iodide of potassium till he and his patients were tired out with the hopeless pursuit. He did not admit that the comparison drawn between fibroid growths and the healthy growth of the uterus under the stimulus of gestation was complete. He did not find in fibroids those large fibre-cells which formed during gestation, and which were so readily melted down and absorbed afterwards. The fibroid was denser; it contained more fibrous tissue; it was very much cut off from the vascular system of the uterus. The diagnosis of fibroid was often difficult. We ought not to be satisfied to accept a case as one of fibroid tumour unless it was indicated by one of two tests; firstly, the passage of the uterine sound beyond the normal length; and secondly, the mobility of the tumour and uterus *en masse* between the finger or the os uteri and the hand outside. He had seen fibroids diminish and disappear; but he had not seen medicines exert the smallest influence.

Mr. Spencer Wells concurred with Dr. Barnes in his doubts as to the power of medicines in causing absorption of fibroids; but he had no doubt that very large fibroids did occasionally disappear. The process might go on for months or years, and it might often not be quite complete. In one case the process

seemed to be one of softening or suppuration, the patient not having much discharge, but suffering constitutionally from symptoms of chronic pyæmia. In other cases the process seemed to be a simple atrophy. In others there was more or less calcification. He thought the chloride of calcium hastened the latter of these processes, as it certainly checked hæmorrhage. He believed that if lime were given for too long a time atheroma might be produced; and he had seen two cases where arcus senilis in young subjects and other evidences of arterial degeneration had followed long-continued treatment by chloride of calcium.

Dr. Graily Hewitt remarked that as yet we had no trustworthy means of effecting the removal of fibroids by medication. He believed in their occasional but very rare disappearance. Of remedies he had found a very prolonged use of bromide of potassium and blue pill in small doses act favorably. Pelvic cellulitis was not seldom mistaken for fibroid.

Dr. Greenhalgh was of opinion that medicines had but little effect in curing fibroids; he had, however, seen marked benefit from the long-continued use of small doses of perchloride of mercury with quinine and belladonna, with aperients. He narrated a case in which disintegration of a large fibroid, and its discharge by two openings, one in the cæcum, and the other in the rectum, was progessing when the patient died. The diagnosis in some cases was by no means easy; he had known a retro-uterine hæmatocele mistaken for a fibroid in the posterior walls of the uterus. In another case, an interstitial fibroid deposit in the anterior wall of the uterus was assumed to have been absorbed by the remedies prescribed, when a large polypus was expelled into the vagina. He detailed the particulars of a case of large fibroid of the posterior wall of the uterus impacted in the pelvis, which he had successfully enucleated by an opening made through the vagina into the growth by the actual cautery.

Dr. Wynn Williams said that the action of bromide of potassium resembled that of iodide of potassium, which, as pointed out by Paget, had the power of causing the absorption of lymph effused within and around these tumours, but not of the proper tissue of the tumours themselves.

Dr. Playfair said that since he had written his paper Dr. McClintock had brought forward several additional examples of disappearance of fibroids. With regard to the influence of remedies, he did not believe they ever produced entire absorption of the tumour; they only acted in occasionally diminishing the size of the growth. He could not, of course, answer for the accuracy of the diagnosis in the cases he had quoted, although he considered it highly improbable that some other condition had in all been mistaken for fibroid tumours. With regard to his own case, he could confidently say that the symptoms were too distinct to make a mistake possible.

JUNE 3RD, 1868.

GRAILY HEWITT, M.D., Vice-President, in the Chair.

Present—53 Fellows and 6 visitors.

Charles Case Smith, Esq., was admitted a Fellow of the Society.

The following gentlemen were elected Fellows of the Society:—Hermann Beigel, M.D.; William Jones, Esq.; John Locking, M.D.; P. S. Mootoosawmy Moodelly, M.D., of Madras, and Bernard E. Spaull, Esq.

Dr. GERVIS exhibited a rare form of Monstrosity. It was one of twins, of which a primipara had been delivered at term, and the second child was well-formed and healthy.

THE UTERUS AND VESSELS CONCERNED IN PHLEGMASIA DOLENS.

By ROBERT BARNES, M.D.

History.—Eliza T—, sent into St. Thomas's Hospital by Dr. Gervis, 17th April, 1868; æt. 28; married; delivered of first child on 22nd February; no milk from beginning. She got up at the end of a fortnight and then found the right leg painful and weak; she had rigor at the beginning. Present

state: anæmic aspect; pulse small, quick; irritative fever; the right leg is swollen from the hip downwards; it is not tense now, it has been so; it pits a little; great pain in the groin and hip on moving; there is pain and thickening in the course of the femoral vessels, and still more in the course of the iliacs. The uterus is small and moveable; bowels open; appetite fair; urine sp. gr. 1015, a little albumen, abundance of lithates, acid.

She went on mending slowly until 5th or 6th May, when erysipelas seized the affected leg. On the 11th incisions were made in the leg; no pus escaped.

On the 11th and 12th the temperature was 103·5°, 102·5°.

13th.—Temperature, 8.30 p.m., 103·5°; pulse 140; respiration 36.

14th.—Temperature, 11.40 a.m., 101·0°; pulse 136; respiration 32.

She sank on the 15th.

Autopsy.—The lungs were described as œdematous and congested, free from tubercular or pyæmic deposits. The heart was pale and flabby; many of the fibrillæ had lost their transverse striæ, and contained numerous granules and oil molecules. Valves healthy. The aorta and ascending cava were healthy. The peritoneum was dry, presenting no trace of inflammation. The liver was rather advanced in decomposition; the hepatic corpuscles were loaded with granules.

Kidneys.—Malpighian corpuscles and tubular epithelium cloudy; in parts the epithelium was granular.

The uterus was as much contracted and involution was as far advanced as usual at the date from delivery. The mucous membrane was covered with a glairy mucus. The uterus was quite free from adhesions. The broad ligaments were natural. The veins running in the right broad ligament from the uterus were closed. The right iliac, femoral, and popliteal arteries were diminished in calibre, but healthy. The right common iliac veins, as far as the junction with the cava, the external, and iliac veins, were entirely closed and contracted. The femoral, popliteal and upper part of

the venæ comites were obstructed by coagula, some portions of which were decolorised and firmly adherent. The femoral vessels were matted together by fibrinous effusions.

The whole of the right lower extremity was swollen and œdematous, the integuments being extensively sloughy.

In the upper part of the thigh there was an extensive suppuration following the course of the deep femoral vessels. It extended upwards and was connected with the hip-joint. On opening this joint a thin pus similar to that diffused throughout the adjacent tissues was found in it.

The vessels on the left side were clear.

My inducement to exhibit this specimen is simply that the opportunities of seeing the parts concerned in phlegmasia dolens are rare. This case like most others would, I believe, have ended in recovery but for the attack of erysipelas.

The only remark I wish to add is that the state of the uterus was healthy; that there was no evidence of pus in its substance; that the broad ligament on the side corresponding to the obstructed veins was free from any morbid action, and that hence there seemed no reason to conclude that the obstruction in the iliac and femoral veins was due to absorption from the uterus.

CASES OF OVARIOTOMY.

By P. S. Mootoosawmy Moodelly, M.D.,

GRADUATE IN MEDICINE AND SURGERY, MADRAS MEDICAL COLLEGE; NATIVE SURGEON, CIVIL DISPENSARY, MANARGUDI, TANJORE DISTRICT.

Case 1.—*Multilocular ovarian tumour.*—Cathoyrr, æt. 24. Caste Malabar. Complexion fair, stature short, temperament leucophlegmatic. Admitted 16th February, 1859, with a large ovarian tumour in left side. Was under treatment for the same in the middle of 1858, her health being

delicate; she was then relieved by tapping. On her last admission, being in a better state of health, she wished that the tumour might be extirpated.

History.—Is the wife of a farmer resident in a village adjacent; married ten years; four years after marriage was delivered of a girl; for the three years which succeeded the catamenia were irregular, but within the past twenty-eight months totally ceased. A swelling, about the size of an orange, was first felt in the left side, accompanied by sharp pain in the left iliac region, attended with fever. Soon after, the enlargement became apparent and gradually increased in size, equal to the uterine tumour of the ninth month of gestation. There were nausea and vomiting, accompanied by oppressive respiration, languid circulation and œdema of the legs, habitual constipation, scanty urine, often passed in drops. Insomnia for some months, countenance anxious, conjunctiva pale, tongue furred, skin harsh and dry.

1858.—On examination the abdomen was unusually large, more prominent on the left side, measuring forty-four inches, fluctuation distinct, and a dull sound on percussion. The local and general symptoms were very urgent; emaciation, with a small, quick pulse. Tapping was performed on the 10th September, 1858, when twenty-six pints of thick, viscid, brownish fluid were evacuated (coagulated by heat). The patient made a fair recovery.

On the second admission the tumour had acquired an enormous size from rapid re-accumulation of the fluid. The patient was resolved to take her chance at extirpation, the dangers being fully explained to herself, her husband, and relatives.

The bowels being well cleared, and the urine drawn off, at 11 a.m. on the 6th of March, 1859, the patient was placed in an easy chair (the temperature of the room being 85° Fahr.), and put under the influence of chloroform (℥ij). The legs were stretched apart, and an incision one inch and a half in length was made in the median line about one inch and a half below the umbilicus; the linea alba was

exposed; this structure with the peritoneum was next divided to the same extent, and the shining surface of the tumour came distinctly into view. I introduced my forefinger into the abdomen, and found that the tumour was free from adhesions; the incision was then extended three inches downwards, when the hand was introduced and carried freely over the anterior and lateral parts of the tumour. The great omentum was found adherent to the superior part; the hand was now withdrawn and the tumour tapped with a large trocar, a viscid, dark, brown fluid was evacuated to the extent of several pints; the tumour being much diminished in size the adhesions were divided; no bleeding followed. The tumour appeared to be thick and to have a solid consistence. Having satisfied myself that there were no further adhesions, the tumour was taken hold of and a gentle traction used, but it was found too large to be brought through the incision; the wound was therefore enlarged one inch upwards towards the umbilicus, when it was removed without much difficulty. It was attached by a rather large neck to the broad ligament of the uterus; a long needle with two strong ligatures was passed through the neck; each half of the neck was then tied separately close to its origin. It was next divided about half an inch from the ligatures and completely removed. No hæmorrhage followed; the ligatures being carefully examined were allowed to recede. The right ovary was found healthy; the sides of the wound were accurately brought together by nine interrupted sutures, with long strips of adhesive plaster, compresses and bandage, and a full dose of opium administered.

The tumour was now examined; it consisted of a large, thick, parietal sac, and several other (six) smaller cysts on the free margin of the tumour; the whole weighed twelve pounds and thirteen ounces, and contained twenty-one pints of fluid, of the same character as before.

As a dry preparation the tumour measures thirty-two inches in circumference.

The after treatment of this case was according to the

symptoms present; the patient suffered much from dysentery. The ligatures were removed on the forty-fourth day, and the patient discharged on the fifty-fourth day after the operation.

It is now fifteen months since the woman was operated on. She presents herself regularly every fortnight; she has grown corpulent; the catamenia returned for the first time on the 16th July, 1859, and has been regular since.

Case 2.—*Multilocular ovarian tumour, twice tapped; ovariotomy, and death four days after operation.*—Veeroyer, æt. 48, Pariah; stature short, of delicate make, and of nervous temperament. By account she has been married about thirty-five years, and is the mother of five grown-up children (three male and two female), the last being a boy, who is now fifteen years old. Her husband is living and is a weaver by trade.

Admitted into the hospital for the third time on the 30th August, 1866, with a large ovarian tumour occupying the whole anterior part of the abdomen, more prominent towards the left side, and measuring thirty-one inches at the umbilicus. Dulness on percussion; respiration affected; pulse 84, small and quick; micturates in small quantities; appetite good; bowels regular; sleeps indifferently; catamenia regular. Is in good spirits and cheerful; states that she has walked all the way from her village thirteen miles distant.

States that she first experienced pain in the left hypogastric region about three years before, which was followed by the appearance of a small tumour which gradually increased in size; there was no interruption in her menstrual functions.

She was tapped twice at an interval of a few months, first in March, and secondly in June. At each twenty-five or thirty pints of thick grumous fluid were evacuated, when a solid substance—the cyst—was distinctly felt, moveable and non-adherent. A feeling of exhaustion, with great weakness, was complained of after each operation. This

feeling increased with the size of the tumour, and was attended with irritability of stomach. Under these circumstances the extirpation of the cyst was not attempted, in case of the shock proving fatal. The fluid having re-accumulated very rapidly, the woman was extremely solicitous that the tumour should be removed. She was in good spirits and spoke confidently of a favorable result. The dangers were fully explained to herself and her husband, and they unanimously resolved to take their chance.

The bowels having been opened by laxative pills, the patient was placed under chloroform, and the operation performed similar to that detailed in the last case, with these exceptions:—Soon after the parent cyst was tapped, and I was satisfied that there were no adhesions, the patient was made to lie on her right side, and in this position the withdrawal of the cyst was made, but it was found necessary to enlarge the wound an inch above and below, and to puncture two minor cysts. Twenty drops of chlorodyne were administered after the operation. The operation lasted fifteen minutes; there was no bleeding from the pedicle.

The cyst weighed eight pounds and contained six minor cysts, having contents peculiar to each. The chief cyst contained an oily-looking fluid of twenty pints. The other cysts were filled with oily, grumous, sanguineous, and thick yellow fluids.

A dry preparation was made of the tumour; length, eleven inches; breadth, nine inches; circumference, thirty-two inches and a half.

The treatment in this case consisted of anodynes, narcotics, absorbents, stimulants, and nourishing broths, but the patient sank on the 4th of September, 1866, four days after the operation, and died at 3 a.m. on that day.

Case 3.—*Multilocular ovarian tumour; ovariotomy; death fifteen hours after.*—Thyleummay, æt. 45, a tall, elderly-looking woman, native of Putticottah, admitted into hospital 18th November, 1860, with a large ovarian tumour.

Married thirty years; mother of ten children: the last is seven years old; husband alive.

The tumour is large and prominent towards right side, dull on percussion, fluctuation distinct. Abdomen measures thirty-eight inches round the umbilicus; complains of dyspnœa; appetite bad; insomnia; bowels regular; general health good; pulse 85.

States that the disease first made its appearance four years ago, preceded by pain and irregular menstruation. On the appearance of the tumour the catamenia entirely ceased.

Expresses great anxiety to have the tumour removed, and that she is prepared to run any risk to obtain relief.

A purgative having been administered the previous day, the operation was performed at 12 noon on the 21st. The patient having been placed under chloroform, an incision, four inches in length, was made through the integument in the median line of the abdomen between the umbilicus and pubis. The linea alba and peritoneum were then divided, and the tumour, presenting a glistening appearance, was then brought into view. Having ascertained that there were no adhesions, saving a slight one between the large omentum and abdominal parietes which was divided, the cyst was tapped, and thirty pints of thick grumous fluid were evacuated. The cyst was gently withdrawn, a double ligature passed through the pedicle, which was short and one inch and a half wide, and the cyst cut off about half an inch above it; one end of the ligature was brought out and secured. The uterus and left ovary were found healthy. The wound was closed by nine deep sutures, straps, compress, and bandage. Pulse 110. An anodyne was administered.

The tumour was found to consist of a parent sac and several minor cysts, the whole weighing twelve pounds six ounces.

The treatment pursued consisted of stimulants, nutritious broths, anodynes, absorbents, &c., but the patient sank and died at 2 a.m. on the 22nd, or fifteen hours after operation.

ON THE PAIN OF PARTURITION, AND ANÆSTHETICS IN OBSTETRIC PRACTICE.

By A. Ernest Sansom, M.D. Lond., M.R.C.P.,

PHYSICIAN TO THE ROYAL HOSPITAL FOR DISEASES OF THE CHEST; HON. SEC. MEDICAL SOCIETY OF LONDON.

If I brought before this Society the general subject of anæsthesia, I think it would scarcely be necessary that I should preface my remarks by an apology. Whether as agents for the relief of pain which finds its great exemplum in parturition, or as means for the prevention of pain during the performance of obstetric operations, anæsthetics present to the Fellows of this Society an undeniable interest. While I wish to bring before your notice certain views on the nature of Anæsthesia, which I consider the present state of science to have warranted, I shall endeavour to make my communication of more special interest to those who are in the actual practice of obstetrics. I think no one will venture to attack my position when I assert that the employment of anæsthetics to relieve the pains of natural labour has in the last few years greatly increased, and is yet increasing. The 'Transactions' of this Society, containing papers by Mr. Ellis, Mr. Isaac Brown, and others, show that the literature of the subject has advanced, and notwithstanding the vast number of times that anæsthetics have been thus employed, the statement is still true that "there is no well-authenticated instance of sudden death recorded, either in this country or abroad, as occurring from the administration of anæsthetics during natural labour, when such administration has been conducted by a qualified medical man." This statement is endorsed in the most able *résumé* concerning anæsthesia and anæsthetics which has yet appeared, which is contained in the 'American Journal of the Medical Sciences' for January, 1867. I am very anxious here to

correct a misapprehension of the reviewer concerning a statement of my own, particularly as it is of great importance in this question. In my table (On Chloroform, p. 69) of the nature of cases in which fatal accidents from the employment of chloroform occurred, two cases are recorded under the head of "Natural Labour." Now, this table included every known case of death up to the year 1865; I was anxious that the full extent of the danger of chloroform should be stated; nothing was eliminated which could possibly be construed as a case of death from chloroform. Unfortunately, I failed afterwards to sufficiently explain the nature of these cases. They are quoted on the authority of Dr. Robert Lee, and mentioned in the 'Medical Times' of November 6th, 1868, and November 20th, 1868. It needs only a glance to show that the authenticity of the cases is doubtful. In one, the patient was herself the administrator, and of the second, beyond the mere statement of the occurrence, there is not a syllable in detail. It is unnecessary to say that these do not invalidate the proposition. Concerning the safety of the anæsthetic in natural labour—for no one would think now of permitting a lady patient to herself administer chloroform, without the presence and advice of her medical attendant, and the second case is pure hypothesis—I consider, therefore, that we of the present day are justified in arriving at the following conclusion:

That experience shows that chloroform administered by a qualified person to annul the pain of natural labour, is absolutely free from danger to life so far as regards its direct effect.

It follows from this proposition that this branch of medical practice enjoys a remarkable immunity from the dangers of chloroformisation. The reasons of this immunity appear to be these—1. Women are less prone to the ill-effects of chloroform than men. 2. The abolition of pain is one of the earliest effects of chloroform, and requires none of its profound influence.

I commenced some time ago an investigation of the

subject of the pain of parturition. The difficulties were too great, the data insufficient for the purpose, for me to obtain any very important conclusions, but I nevertheless hope that some of the views to which I was led may be worthy of your consideration. I will not stay at the threshold of the subject longer than to suggest a definition of pain as an altered correlation between the nervous matter and the other constituents of the animal body, whereby the neurility of some of the conductors of sensory impressions is exalted.

The pain of the commencement of parturition is too trivial to be of any practical importance. I conclude that it is uterine in origin, from decadence of membranes, or membranes or placenta,[1] but chiefly intestinal in its manifestations.

We now come to the consideration of *true uterine pain.*

The first fact to be noted on this point is, that the sensation of pain is seldom referred to the uterus itself, or to the central part of the pelvis. As Simpson has stated, such pain is usually referred to one or other side—commonly the left, "in consequence, no doubt, of the left side of the uterus and the left broad ligament and ovary being more liable to be irritated by the varying condition of the rectum." The next point is that the involved nervous structures are not those of common sensation, but the sympathetic, which only becomes under extraordinary circumstances a nerve of sensation. The part of the uterus which receives the most abundant nerve-supply is the cervix; and it seems to me that this is practically the absolute starting-point of true uterine pain.

I noticed this point exemplified in a case which I observed of miscarriage in the third month of pregnancy. At the time when I was called to the case the ovum and its appendages were detached and protruding through the os. So long as the mass was lodged in the cervix, the patient was rolling about in agony; but on extraction of the mass, immediately the pain ceased.

[1] 'Simpson's Works,' vol. i, p. 351.

From the cervix as a centre the influence is reflected chiefly to the nerve-filaments which supply the intestines, and it is here at the periphery that occurs the manifestation of pain, a very complete identity with the symptoms of intestinal colic being observed. The correlated influences contributing their quota to constitute the entirety of the uterine pain are—1. Spasm which chiefly involves the neighbouring sphincters, and the voluntary muscles constituting the floor of the perinæum. 2. The more remotely reflected pains in the lumbar and sacral regions, the abdominal walls, the breasts (usually the left), the face and head, and the extremities.

I have mentioned these facts as an attempt to lead step by step, and according to a logical as well as a pathological and physiological pre-arrangement, to the ultimate conclusion—that true uterine pain presents just those conditions which anæsthetics are the best calculated to relieve, and that in the earliest stages of their influence.

First of all, it is well known that in the operation of anæsthetics pain is annulled before common sensibility; relief of pain is one of the very earliest symptoms of narcosis. The condition also known as spasm is relieved by the smallest doses and in the earliest stage of the action of an anæsthetic.[1] Furthermore pain affecting the sympathetic is relieved at an earlier stage than pain affecting the nerves of common sensation. It follows that not only are anæsthetics peculiarly adapted to relieve true uterine pain, but that they do so in very small doses and at the earliest stage of their influence, when the possibility of danger does not accrue. A familiar instance of the power of feeble anæsthetics to relieve pain is afforded by the well-known fact that in females who suffer from dysmenorrhœa the common panacea is a little gin and water, or some compound of an alcoholic which experience teaches to be efficacious, and

[1] See Anstie, 'Stimulants and Narcotics,' p. 129. Matteucci, 'On Nature of Spasm' in Brown-Séquard's Lectures. And 'On Use of Chloroform in Functional Nervous Affections,' by Dr. B. Séquard, 'Lancet,' March 10th, 1866.

some gastric stimulant, such as ginger, which relieves the intestinal complication.

We now come to the consideration of the nature of the pain of parturition at the full term. We have mentioned the determining cause, the earliest effect, the symptoms so far as they are due to the uterus itself; but other complications now obtain: whereas in the cases heretofore cited the chief correlations were with sensory manifestations, they now are with sensory and motor manifestations intimately combined. As Brown-Séquard says, "The relation between the degree of contraction of the uterus and that of pain is so evident that the word pains is employed for that of contractions." The muscular effects, voluntary as well as involuntary, co-operate as causes of pain, and the suffering is enhanced in varying degree by the spasm of the perinæal structures.

Another very important relation of the pain of parturition is that which subsists with emotion. It is, however, a matter of experience that the emotional state, at the time of parturition, is very favorable for the administration of anæsthetics. Of course I am ready at once to admit facts, which should be cardinal ones, in all these investigations, viz., that individual susceptibilities greatly vary, that the proneness to pain of some, the fortitude of others, the preference occasionally manifested to the endurance of the suffering rather than the influence of the antidote, and other mental states which require merely the exercise of common sense to determine, are so many causes which contraindicate, in certain individual cases, the use of anæsthetics. But it is in those common instances of severe suffering, the aggregate of which, in this world, it must be impossible to compute, that the value of the boon of anæsthesia is evident. It is a saying as old as Galen, "Dolor dolentibus inutilis est." It may be added that, except in so far as it offers a sign for diagnosis, "all pain is hurtful." Cases have occurred showing that mere pain will destroy life, the tendency of all statistical inquiry has been to prove that the danger of parturition is in direct

proportion to the violence and duration of the pains. It follows that any means of annulling the suffering of labour, provided that it do not superinduce other more potent causes of danger, is a direct conservation of life.

Upon this occurs the question whether the use of anæsthesia can superinduce danger, and what is the danger? The answer is that even at the present moment the profession is not quite agreed whether, by suspension of expulsive efforts or superinduction of hæmorrhage, anæsthesia is or is not a possible source of danger.

To investigate this question it will be well to turn to the physiological conditions.

The following points will be conceded—that abolition of pain can be obtained without the enfeeblement of motor influences; that this is attained in the great majority of cases; that pain can be annulled without even the suspension of the action of *voluntary* muscles; that contraction of the involuntary muscles persists in the profoundest anæsthesia. It follows that, between the abolition of pain (and even of sensibility) and the impairment of the contractile force of involuntary muscle, there is a wide interval which it is needless to overpass. I shall presently show that anæsthesia can be induced without impairment of the velocity of the circulation.

I may here state that I consider the following to be the solution of the question of the asserted predisposition to hæmorrhage induced by anæsthesia. Such may occur from two causes, either from the induction of a too profound narcosis which has begun to involve the motor influences, or from a circulatory debility induced by the anæsthetic.

Both these causes are preventible, and issue only from the fact that in these cases an unnecessarily large dose is administered.

The question the consideration of which I now wish to submit you is this—What should be the action of a typical anæsthetic for obstetrical purposes?

On this point the first thing to be noticed is the nature of anæsthesia as induced by agents known as anæsthetics.

More than ten years ago observation led me to the opinion that the commonly received notion that anæsthetics primarily affected the brain and nervous system was erroneous. Dr. Snow had previously attacked the validity of the doctrine of the determination to the brain by the summing up of his conclusions with the phrase, "Narcotism is suspended oxygenation." A further elucidation of this was made, in 1856, by Dr. George Harley, who proved, by comparative experiments, that anæsthetics arrest the oxidation of the blood, even when removed from the body. I made a large number of experiments on the influence of anæsthetics upon the blood and upon the circulation, and in a paper read before the Medico-Chirurgical Society in 1861, and a communication to Dr. Beale's 'Archives of Medicine,' No. vii, 1861, I enunciated the doctrine that anæsthetics operate indirectly by suspension of oxygenation and directly by action upon the blood and upon the forces of circulation. This doctrine I have discussed in detail in my book on Chloroform. Subversive of our former views as to the action of anæsthetics, I could not expect that this theory should be at once received, and in the reviews which have appeared both in this country and America I find that it is not yet admitted as the correct explanation of the phenomena of narcosis. In the 'American Journal of the Medical Sciences,' however, the reviewer does me the high compliment of calling mine the physico-chemical theory—a compliment, because in my opinion it is precisely, in so far as a theory can, by physico-chemical means explain the phenomena of Biology, that it will stand the test which the progress of science applied to it.

It is chiefly because I am convinced that this theory affords the best answer to the *practical* problems of anæsthesia that I bring it before the Society, and as evidence in its favour it is no small consequence to me to have this written testimony of Dr. Beale:—"I have no doubt your view of narcotism is true. It accords with the inferences arrived at from so many kinds of observations."

I will not stay to inquire whether anæsthetics act by

absorption into the blood. Every one, I think, now agrees that they do thus act. It is scientifically proved that the agent, in its circulation through the system, suffers no chemical change. Chloroform circulates *as chloroform.*

This attained, how do anæsthetics proceed in their action? Do they directly attack the nerves and nerve-centres? If this could be answered in the affirmative there would be little need to inquire farther. The latest writers on the action of medicines (except always Dr. Bence Jones) and those who embrace the theory of Messrs. Lallemand, Perrin, and Duroy, adopt this view, but it is surely no unfair criticism to say that those who adopt it admit that, so far as narcosis is concerned, "all that we know is, nothing can be known."

We will, in our investigation, start from facts which have been actually established. According to Dr. Snow's careful computations it requires only twenty-four minims of chloroform circulating in the mass of the blood to induce the most profound narcotism; it follows that the effects known as narcosis are due to the circulation of the agent employed in a state of extreme dilution. What effects would a solution of such tenuity have on the nerves and nerve-centres of sensation? Direct experiment says none, for not only this but a concentrated anæsthetic applied to these structures induces no signs of anæsthesia. But it may be said that there is some molecular union accomplished through the vital force between the anæsthetic on the one hand and the particles of the nerve acted upon on the other. This is the only feasible basis on which the hypothesis of the action of anæsthetics on brain matter *can* rest, and what evidence is there to support it? Of course we know that lesions of the central nerve-structures produce symptoms identical with those of narcotism: but in such cases the lesions are to be detected by physical examination. Moreover, in the coma induced by the alkaloids we discover congestions and effusions which we can trace to a causative relation with the symptoms. But what is the case in the

narcosis induced by chloroform? the brain is found to be pallid rather than injected, and no physical lesion is to be discovered.

The action of alkaloids would certainly lend countenance to those who hold to the theory of direct action; but the physical conditions are very different from those which obtain in the case of chloroform. By a new and perverted nutrition certain organs become modified by a body that cripples their functions. So strychnine will influence the medulla oblongata, veratrine the heart, curare the muscles; but, by a process of nutrition, they are absorbed and, by a process of excretion, eliminated. *If there is this intimate union between chloroform and nerve-molecules, why do the effects of the former so readily pass off?* Furthermore, it is wholly unnecessary that we should presuppose that a primary implication of the nerve-centres is necessary for the manifestation of the phenomena of narcosis. For we know that these occur in apnœa, in which no direct toxic agent is concerned, and an identical state is induced by agents which no one suspects of a direct action on nerve matter; by carbonic oxide which spoils and destroys the blood-globules; by carbonic acid which arrests the oxidation of blood by the physical effects of its presence; and by other gases which interfere with the due aëration of the blood.

I have now shown the difficulties which lie in the way of our reconciling with the current ideas a sufficient explanation of the phenomena of anæsthesia. My plan of argument does not render it necessary that the latter should be *proved* to be untenable. My objections may be counted pungent, but not fatal; but if, after showing the stumbling-blocks in our way, I can by another theory abolish discrepancies and incongruities, and can explain signs which have remained unexplained before, I shall make a step towards an expression of the most attainable truth. Having thus shown what anæsthesia is not, I shall endeavour to show with what certainty I can what it is.

"Narcotism is suspended oxygenation." This dictum is

the keystone of the theory which explains the action of the most dissimilar narcotics. The oxygenation of the blood suspended, the molecular integrity of the tissues is interfered with, there becomes, as Dr. Richardson has put it, "inertia of the molecules;" but neither of these phrases explains the *ultima ratio*. The question yet remains, How do anæsthetics induce this suspension of oxygenation?

In the cases of all the anæsthetic agents with which we are acquainted, the first manifest effect is upon the circulation of the blood. The heartbeats increase in frequency and in force. This fact is proved as well by actual experiment as by common observation. I have also proved that a primary effect of anæsthetics is, besides an increase in the rapidity of the flow of blood, a contraction of minute systemic arteries.

It is evident, therefore, that anæsthetics at the early stage of their action are excitants of the cardiac and vasomotor nerves. I need not stop to state the intimate relation which must subsist between the absorbed anæsthetic and those nerve structures which Dr. Beale's researches have shown to ramify amidst the ultimate structures of the vascular network.

From these causes, which concur to produce an increased impulsion of arterial blood, a secondary effect is produced which I believe has much to do with the superinduction of the state of anæsthesia; an injection of the venous capillaries, a forcing onwards of the blood into the venous channels, and hence *a disturbance of the normal relations subsisting between the arterial and venous system.*

If we pursue our investigations further, we find that, after the stage in which there is increased activity, if the flow in the arteries has persisted for some time (that time varying with different anæsthetics), an opposite condition is induced, the heart beats with diminished force, the flow is seen to be pulsatile, the arterial walls become relaxed, and the blood moves with a slow and toiling current. This, however, is not an essential condition of anæsthesia. Anæsthesia in many cases exists whilst the arteries are yet contracted.

We come now to these important points: that anæsthetics vary in their action upon the forces of the circulation; that in the cases of alcohol, ether, and especially tetrachloride of carbon, complete anæsthesia occurs, and persists whilst the afferent blood-vessels are contracted; but that chloroform has the power of producing paralysis of the vaso-motor influences much more rapidly than the other agents; *and that in direct proportion to the concentration of its vapour.*

And now we become able to explain the apparent paradox of the varying post-mortem appearances in cases of death from various anæsthetics. Alcohol, ether, and tetrachloride of carbon cause a prolonged stimulation of the cardiac and vaso-motor forces; the consequence is, an urging onwards of the blood towards the venous channels: thus the venous system becomes loaded, the respirations are enfeebled, death partakes of the form of apnœa, and after death are found turgidity of the veins, accumulation in the sinuses of the cranium, and distension of the right side of the heart with a blackened blood.

In case of chloroform it is otherwise; its stimulant action is more transient, it may quickly superinduce paralysis of the circulating forces, and that in an inverse proportion to the dilution of its vapour with air. Freely diluted, its stimulant action is prolonged; but concentrated, it is evident that the vapour becomes a rapid paralyser of the sympathetic, and the post-mortem signs are exactly those of syncope.

By an argument which I fear has proved wearisome I have now arrived at a point which I wish strongly to place before you.

The usual course in investigations on anæsthetics has been to analyse the results of practice and common observation, to build up opinions upon opinions, and to promulgate doctrines *solely* on the basis of actual experience. By such means I acknowledge that results of the highest value have been arrived at. But in this paper I have reversed the process. My aim has been to establish by experiment and analogical observations a sound pathology, which I believe to be the only stand-point for a sound therapeutics. We can

thus test the fallibilities of theory by the test of experience and the fallibilities of experience (for these in biology are undoubted) by the test of theory. The point, then, on which I wish to insist is this:—that theory and practice, experiment and experience, combine with the records of actual cases in the past to prove that strong atmospheres of chloroform suddenly paralyse the motor influences of the circulation, whilst dilute atmospheres act with a comparative benignity.

Concurrently with the action of anæsthetics on the motor powers of the circulation they possess an influence upon the blood itself. This influence is proved (1) by Dr. George Harley's experiments detailed in the 'Philosophical Transactions;' (2) by my observations on the change in form and integrity of the blood-corpuscles induced by the several anæsthetic agents; (3) by the alterations in the colour of the blood which have been noted; (4) by the argument from analogy which states that carbonic acid and carbonic oxide, both of them agents which induce narcotism, act powerfully upon the blood-corpuscles.

The conclusion appears to be, that though all anæsthetics tend to impair the integrity of the blood, and to cripple its physico-chemical properties, they do so to different degrees and in different ways, some, as ether and carbonic acid, distending them, others, as carbonic oxide, emptying them. The cause, therefore, is various, but the effect the same, viz.—disturbance of those normal changes in the blood essential to perfect life.

Time will not permit me to investigate the other concurring causes of the state known as anæsthesia. I hope I have proved that the doctrine which asserts that anæsthetics acts in virtue of an electric affinity for the brain is an assertion unconfirmed by a single proof: but that the correct explanation of their action is, that they, being absorbed and projected throughout the system, act by modifying the state of the circulation, and by suspending by the physical effects of their presence the vital endowments of the blood. Their chief danger is, that they shall

produce a paralysis upon the circulating powers, but this danger, by the choice of proper agents, can be averted.

The course of our investigation, then, this evening, has led to two conclusions—one, that to relieve the pains of natural labour only, small doses and the early influences of an anæsthetic are necessary; and the other, that these conditions can be fulfilled with no depression, but even an exaltation of the forces of the circulation.

We now come to the briefest possible consideration of the agents employed in the present day, as anæsthetics in obstetric practice.

(1) *Tetrachloride of carbon.*—This agent was first introduced by myself as an anæsthetic, and first employed by me to relieve the pain of labour. The conclusion I have come to is, that from its density and other physical characteristics it is not the best anæsthetic to be used in the pains of natural labour; but that it is the best of all anæsthetics that I am acquainted with to relieve (as Dr. Protheroe Smith has pointed out) headache and the slighter manifestations of pain.

(2) *Bichloride of methylene.*—The question of its employment is yet *sub judice*. At the present I can see no special reason for its employment in obstetric practice.

(3) *Nitrous oxide.*—I only mention this to urge its non-employment. I am informed that it is to be tried in midwifery. I do not consider a state of complete asphyxia at intervals of from five to ten minutes through the course of parturition a thing to be desired.

(4) *Chloroform.*—Administered according to definite principles, and in a careful manner, I believe that this is the best of all anæsthetics in midwifery practice. Concerning it we have determined the following points:

(1) That small doses and the early stages only of its influence are necessary.

(2) That administered in this mode, and to this extent, it is innocuous, and even exalts circulating power.

(3) Large doses are quite unnecesssary for the fulfilment of the conditions of obstetric anæsthesia; and

(4) Large doses, and particularly large proportions, are dangerous, as producing circulatory paralysis.

The questions now arising are—(1) What is a safe and efficient proportion of chloroform which may be inhaled? (2) What proportion do we, at the present time, administer by the ordinary means?

The answers to the first question are:—that an atmosphere containing from 5 to 8 per cent. of chloroform vapour is fatal to the life of animals; that safety is almost assured in the case of atmospheres containing from 2 to 4 per cent.; that reliable observers, including the Chloroform Committee of the Medical and Chirurgical Society, concur in recommending an atmosphere of $3\frac{1}{2}$ per cent.; that Mr. Ellis has stated that an allowance of barley 1 per cent. is necessary to fulfil the conditions. Such are the exigencies—an atmosphere containing from 1 to 4 per cent. of chloroform vapour is amply sufficient for all our purposes of narcotism.

What proportion do we administer by ordinary means? In the first place this varies according to temperature. Twice as much chloroform will be given off at a temperature of 60° as at a temperature of 40°; and more than twice as much at a temperature of 75° as at one of 55°. But air at 60° takes up a proportion of 12 per cent. of chloroform vapour, a proportion proved to be dangerous.

On the other hand, Dr. Snow has said that "air does not become fully saturated with vapour during the process of inhalation." I have made much inquiry on this point, and have come to the conclusion that Dr. Snow overlooked a circumstance which contributed to the concentration of chloroform vapour inhaled—I mean the influence of *currents* of air.

My experiments have led me to the conclusion that air drawn over the surface of chloroform tends to take up a larger proportion than that indicated by the saturation power, and this in a direct ratio with the quantity of chloroform exposed.

But I find that the fact of chloroform being poured

upon lint imposes a check on this tendency to supersaturation.

Nevertheless, when a drachm of chloroform is poured upon lint, and air drawn over it at 60° Fahr., the proportion of chloroform inhaled is more than double that which is indicated as the extreme strength which can be inhaled with perfect safety.

I think, therefore, it is incumbent on us to dilute the chloroform vapour which we exhibit. This dilution can be effected—

(1) With air, as by an instrument such as Mr. Clover's, or my own.

(2) By volatile media, as in Mr. Ellis's plan.

(3) By the use of "anæsthetic mixtures," which act partly by dilution with the vapour of the anæsthetic commingled, partly by retardation of evaporation.

I am assured by many experiments on the following points:

(1) That the best anæsthetic mixture is one of chloroform and absolute alcohol.

(2) That the principal value of the alcohol is to retard the too rapid evaporation of the chloroform.

(3) That by means of this mixture the regulation of the strength of the atmosphere inhaled is to be effected with sufficient precision for all practical purposes.

(4) That the anæsthetic mixture to be recommended for use in obstetric practice should consist of one part of chloroform to two of absolute alcohol.

A.

Showing the strong doses of chloroform vapour which air, at temperatures varying from 60° Fahr. to 64° Fahr., will convey.

Table I.

Resulting atmospheres in cases of varying volumes of air passed over chloroform.

Quantity of chloroform employed.		Quantity of air passed over.	Loss of chloroform, *i. e.* quantity taken up by the air.	Percentage of chloroform vapour in resultant atmosphere.
Fluid drachms.	Grains.	Cubic inches.	Grains.	
2	180	100	73·5	35·7
3	270	400	195·	27·1
2	180	375	166·5	25·2
3	270	800	226·5	17·6
2	180	750	172·5	14·9
In these instances the chloroform was poured upon lint.	76·5	100	20·	13·2
	38·25	100	13·25	9·9
	25·5	100	12·25	8·5
	12·75	100	9·75	6·9
	6·375	100	5·875	4·3

It is seen from this table that air, inspired from a surface of chloroform at ordinary temperatures, can be loaded with chloroform vapour to the extent of 35 per cent.; that as the chloroform continues to evaporate, the proportion rapidly decreases; that the proportion also diminishes according to the quantity of chloroform originally employed; but that even half a drachm poured upon lint will give off at the earliest inspirations an atmosphere containing more than 9 per cent. of vapour, a percentage known to be dangerous.

B.

Anæsthetic Mixtures.

Tables showing the slight variations of specific gravity in mixtures of chloroform exposed to the air for different periods.

Table II.

Mixture of equal parts of ether and chloroform.

		Differences.
Specific gravity of mixture	1·1200	0
After 15 minutes' exposure	1·1550	·035
„ 30 „ „	1·1694	·0144
„ 45 „ „	1·1740	·0046
„ 60 „ „	1·1770	·0030

The reasons for not pursuing investigations with ether as a diluting agent were—(1) that it was found that the ether mixture was generally considered unpleasant; (2) that in animals the physiological effects seemed very nearly to approach those of pure ether.

Table III.

Mixture of equal parts of absolute alcohol and chloroform.

		Differences.
Specific gravity of mixture	1·147	0
After 15 minutes' exposure	1·128	·019
„ 30 „ „	1·098	·030
„ 45 „ „	1·067	·031
„ 60 „ „	1·038	·029

C.

Showing the action of absolute alcohol as a diluent of chloroform vapour.

Table IV.

Relative volatility of chloroform and mixture of chloroform with equal parts of absolute alcohol, when 125 cubic inches of air were blown over each respectively.

	Loss by evaporation.
Chloroform	26 parts.
Chloroform and alcohol	18·5 „

Table V.

Proportions of chloroform vaporized when 375 cubic inches of air were blown over.

	Grains.
Chloroform, pure	127·5
Chloroform and alcohol	60

It may be concluded that absolute alcohol, mixed with chloroform, acts as a diluting element, but chiefly by restraining volatilization, favours admixture with air; for practical purposes it may be considered that in equal volumes the strength of the resultant atmosphere is reduced one half.

Dr. Charles Kidd, in venturing to say a few words on the paper, offered the meed of approbation so justly due to the author for his laborious researches, if not for the subtle and ingenious train of reasoning in the communication before the Society.

Dr. Kidd doubted, however, the chemico-vital hypothesis of anæsthesia as being only deficient oxygenation: else why is the hyperoxidized "laughing-gas" such an active anæsthetic, nor is the arterial blood at all darkened in the deepest coma under chloroform. This, however, is a trivial point, but that bichloride of methylene with excess of carbon founded on this hypothesis, after extensive trial in Paris has been given up as worthless, but only after the chemico-vital school in purely wild speculation had thrown great obloquy on chloroform, Dr. Kidd agreed with the author that methylene chlorides, laughing-gas, the new chloride of carbon (of Dr. Protheroe Smith), were all far inferior to the old anæsthetics. What we want, in fact, is fair trial for chloroform, not two medical men, perhaps, in fifty understanding its real value, while they at once are attracted by the abstract theories as to new compounds which promise so much that is impossible. The obloquy and prejudice against the old anæsthetics is increasing, the public ever eager for novelties. In a recent midwifery case, one of a dozen the speaker could cite if necessary, where he was in attendance and expected "puerperal convulsion," he was anxious to give chloroform, but the husband of the lady and her friends had been reading such direful accounts of chloroform in the newspaper, and such promises of infallibility and generalisation from new researches and experiments in "laughing-gas," methylene, and other compounds, that the very mention of the word chloroform was met by loud protest. Yet chloroform is perfectly safe in midwifery, a great boon and blessing in convulsions. You in vain argue against this prejudice, or the idea often urged, even by surgeons of the old school, that a hundred years ago women did not require chloroform in childbirth.

Then as to Dr. Sansom's opinion in the paper, that chloroform acts only on *sensitive* nerves, never on the "motility" of the uterine muscles, surely in "version" cases the grand value of chloroform is to relax the grasp of the uterus or its motility. Then as to the vaso-motor theory, this vaso-motor action is

probably a coincidence, the insensibility of epilepsy is so caused; but how different is that from the narcosis of ether or of chloroform, the former, in fact, is more like deep intoxication which subsides as the ether escapes from the blood; the advocates of "laughing-gas" say this gas does not break up the blood-corpuscles, so it is safer than ether; you read this in all the newspapers as a new revelation, but the press refuse to state that chloroform does not break up the blood-corpuscles either. Next, as to the anæsthetic "mixtures," they only blunt and confuse the action of the chloroform; they lead to advertised specifics; the alcohol is wasted; it remains in the soggy wet inhaler, or sponge, and has to be squeezed out. It is as if a surgeon preferred a blunt bistoury. Ether and chloroform, twenty years' experience now tell us, are best when not mixed but used alternately. The ether always quickens the pulse if flagging under chloroform.

No doubt these are small matters to the men of wide generalisations, but they are the result of experience in the operating theatre and at the bedside in midwifery cases, where it will not do to carry generalities or large gasometers. Then as to these percentages of chloroform vapour, boiling points, densities of gases, &c., these may be left with other speculations in the laboratory, far better to study the marks or stages of anæsthesia, the admirable effect of ergot, or of ether *alternately* with chloroform, the splendid restorative action of electricity to the phrenic nerve in cases of accident, nor does chloroform depress the heart in ovariotomy, as persistently stated by the advocates for methylene, ether spray, complicated inhalers, &c.

Experiments on animals with anæsthetics are only part of the truth, they are invaluable in pure physiology or anatomy; but we cannot obtain the same conditions in observing two or three pigeons suffocated as in two or three thousand midwifery patients. With the hopes and fears of these patients, their various emotions, their nervous, hysteric or other constitutional states, rigidity of os uteri, perhaps easily removed by chloroform, or convulsions at once quieted by it, no doubt subtle and ingenious logic on experiments, abstract theories, wide generalisations on a few suffocated animals especially in the public mind have a great effect, but they do not help us much in rough work of real practice. Of six small animals under the sand bell-glass with chloroform, six mice or kittens, one will die while five do not seem to suffer; this points to idiosyncrasy, not any generalisation, and in rough work of practice we meet such effect of emotion in the human subject every day.

Dr. Cleveland inquired if, in administering the mixture of chloroform and alcohol, it were necessary for the insurance of complete safety to the patient that an inhaler be employed whereby the proportion of anæsthetic vapour set free could be regulated; also, at what stage of ordinary labour administration

should commence; again, whether the inhaler should be applied as soon as a pain came on or in anticipation of it; and lastly, in what quantities at a time the mixture should be supplied for inhalation.

He had from time to time been in the habit of using a mixture of chloroform and alcohol, as suggested by Dr. Sansom at a previous meeting, applying it in half-drachm doses on a napkin, and waiting until evaporation had taken place before adding a further supply. In his hands the effect had been for the most part that of materially soothing pain and producing semi-unconsciousness, but never complete insensibility or any symptom that could cause alarm.

Dr. W. Martyn said it has been suggested by Dr. Kidd that chloroform favours post-partum hæmorrhage. I have had some experience in its use, and I cannot say that I have met with such results; on the contrary, I am inclined to think that a tolerably free use of chloroform affords on the whole some security to the patient; at all events I have never had a dangerous degree of hæmorrhage after a free use of chloroform. I know one practitioner who has given a series of cases, some in which hæmorrhage had previously happened, showing that chloroform does not predispose to hæmorrhage.

Dr. Sansom, in reply, said that it was with a view to avoid the necessity of using inhalers and any machinery for dilatation that he recommended the mixture with alcohol. In this case no other means than the handkerchief or, what was better, a handkerchief pinned upon cardboard and folded into a hollow cone, were used. Dr. Kidd had objected that when the mixture was exposed the chloroform evaporated away from the alcohol. Precisely so, but it did not evaporate so fast, and this was the reason why its dilution with air was insured. Those who deprecated inferences from experiments on the lower animals and condemned physico-chemical inquiries, he thought, scarcely walked in the light of the science of the day. It was where deductions from these coincided with the results of actual experience that practice was guided and theory confirmed.

JULY 1st, 1868.

JOHN HALL DAVIS, M.D., President, in the Chair.

Present—35 Fellows and 6 visitors.

Dr. Hermann Beigel was admitted a Fellow of the Society, and Mr. William Jones, of Ty Newydd, Ruabon, was declared admitted.

The following gentlemen were elected Fellows of the Society:—Alexander Boggs, M.D., Paris; F. H. Daly, M.D.; Evan Jones, Esq., Aberdare; Parkinson Oates, M.D.; Adam MacDougall Rogers, Esq., Bombay Army, and Edward Woakes, M.D., Luton, Beds.

Dr. FITZPATRICK exhibited an early ovum, with the funis tightly encircling the left thigh of the fœtus.

CASE OF TUMOUR FROM THE ANTERIOR WALL OF THE VAGINA.

Dr. MEADOWS exhibited a curious specimen of tumour which he had removed from the anterior wall of the vagina. The case was somewhat remarkable from the position of the tumour, which led to a difficulty in diagnosis. The history was as follows:

M. M—, æt. 34, single, was admitted into the Hospital for Women on April 24th, 1868. She had had one child

seven years before, and had enjoyed good health till just before Christmas, 1867, when she began to suffer from bearing-down pains about the pelvic region, shortly after which she noticed what she thought was "a falling of the womb," that is to say, something projected from the vulva, which was at first no larger than the thumb. The bearing-down pain increased, and with it the tumour; she had advice and was told that it was the womb coming down.

When first seen by Dr. Meadows there was a tumour projecting beyond the vulva about the size and shape of a turkey's egg; it was then in a state of slough, was horribly offensive, and the patient seemed thoroughly out of health. For this she was treated with tonics and good diet, and the tumour was poulticed with charcoal and yeast till the sloughing portion separated. Careful examinations were made at different times to discover the os uteri, but without success; the tumour was adherent to the vagina all round, and free hæmorrhage occurred in breaking down the adhesions during the examinations. Meanwhile the tumour was evidently growing, its surface was nodular and presented a sort of fungoid appearance and was everywhere covered with granulations.

On the 16th of May, while the patient was under the influence of chloroform, a more complete examination was made, and it was then discovered that the uterus was situate high up in the vagina, behind and above the tumour, and that the latter sprang from the vagina in front, or from the floor of the bladder, that it grew both downwards and outwards beyond the vulva, and upwards behind the bladder, between it and the uterus. The single wire écraseur was then applied as deeply as possible, and a mass the size of two fists was removed, after which, by a process of gouging, some smaller portions were removed. The tumour easily broke down, being very friable. The hæmorrhage during the operation was rather profuse, and the vagina was accordingly plugged.

For several days after the operation all went on well, but at the end of a week the patient became suddenly very

ill with symptoms resembling those due to embolism, and she died the same evening.

On *post-mortem* examination firm, white, fibrinous clots were found in both cardiac ventricles, that in the right extending into the pulmonary arteries. The left kidney was dilated into a mere cyst, its pelvis and corresponding ureter being a good deal distended. On tracing this downwards, the cause was discovered to be pressure on the vesical orifice of the ureter by the tumour. The bladder was small, its walls thickened. The uterus was normal in size and perfectly independent of the tumour, which appeared to have sprung from the fibrous tissue of the roof of the vagina, to the left of the urethra, and to have grown thence in all directions, but especially upwards to the left, and downwards beyond the vulvar orifice.

Under the microscope the tumour was found to be made up of long, spindle-shaped, fusiform fibres, with a distinct nucleus, some granular cells, granules, oil globules, and fibrous connective tissue. No compound cells were found.

Though this growth was distinctly fibrous in structure, it was not what is ordinarily understood as fibrous tumour; it was much more friable than those we meet with in the uterus, and its mode of growth was also unlike an ordinary fibrous tumour; it was too rapid in its development, and was of a more burrowing nature than they are usually. Moreover its appearance during life, with its nodular and, at the same time, raw and granulating surface, resembled rather a malignant than a benign growth. Its character, history, and situation are of especial interest, and this was enhanced by its resemblance outwardly to procidentia uteri, making the diagnosis at first a matter of some difficulty, especially when in the state of slough, and subsequently while granulating. The certainty, however, that it was growing was held to be sufficient to remove all doubt on that point, and to justify an attempt to remove it.

CASE OF FACE PRESENTATION, IN WHICH DELIVERY WAS EFFECTED BY THE CEPHALOTRIBE.

By J. Braxton Hicks, M.D., F.R.S., &c.,

LECTURER ON MIDWIFERY, AND ASSISTANT PHYSICIAN-ACCOUCHEUR AT GUY'S HOSPITAL; PHYSICIAN TO ROYAL MATERNITY CHARITY; EXAMINER IN MIDWIFERY AT UNIVERSITY OF LONDON, ETC.

As the following case may be interesting to some as an example of the use of the Cephalotribe, I lay before you the fœtus, with the instrument attached, exactly as it was delivered; and also a photograph of the same.

The case was as follows:—

A very small primipara had been in labour twenty-six hours when I saw her. The os uteri had been dilated for many hours, but the head still rested on the brim, presenting by the face. Her medical attendant had employed the forceps freely but unsuccessfully. I found the funis near to the os, but pulseless. The brim was small throughout, but worse in its transverse. The uterus was tightly clamped round the child. This prevented my being capable of altering the presentation in any way. I therefore perforated the forehead, then put on the cephalotribe, and employed the screw. The head was readily compressed, and slight traction employed. As the head did not descend readily, I thought it best to apply it at another part. This was done easily. Traction was again made, without progress just at first, but on my adapting the flattened head to the rather unusually distorted pelvis, the head came down in the condition you may see in the photograph. The head was quite full-sized.

The operation was very simple and free from the dangers of spiculæ of bone, or pointed hooks; from perforation to delivery occupied less than ten minutes.

I do not mean to affirm that the crotchet could not have been used, but from my experience of the two operations, I

am satisfied that the cephalotribe simplifies the delivery considerably in the severer forms of craniotomy. The case recovered very well, though the placenta had to be removed manually.

CASE OF PRESENTATION OF THE RIGHT BREAST, FOLLOWED BY PROLAPSUS OF THE CORD AND RIGHT ARM; DELIVERY BY VERSION.

By John Brunton, M.A., M.D.,
SURGEON TO THE ROYAL MATERNITY CHARITY, ETC.

On Friday morning, June 26th, 1868, at a quarter to one o'clock, I was sent for by Mrs. Bennett, midwife to the Royal Maternity Charity, to help her in a difficult private case.

I ascertained from her that Mrs. S—, then in labour with her second child, had been ill for some time. The liquor amnii had drained off on the previous morning, thirty-six hours before the midwife had been called, viz., 9 p.m. of the 25th. The midwife's examination puzzled her, the os uteri was completely dilated, the pains were strong, but not very frequent, about every ten minutes or quarter of an hour. She ascertained that the presentation was abnormal, and supposed it to be that of the breast, as she said that she could feel the ribs of the child.

As the pains were not very active she determined to wait, and about half-past eleven a loop of the cord came down, followed shortly after by the right arm. This she pushed up and then sent for me; as I was not at home at the time, she awaited my arrival.

On my arrival at a quarter to one, I found on examination that the right arm was again prolapsed, and that the loop of cord was as stated above.

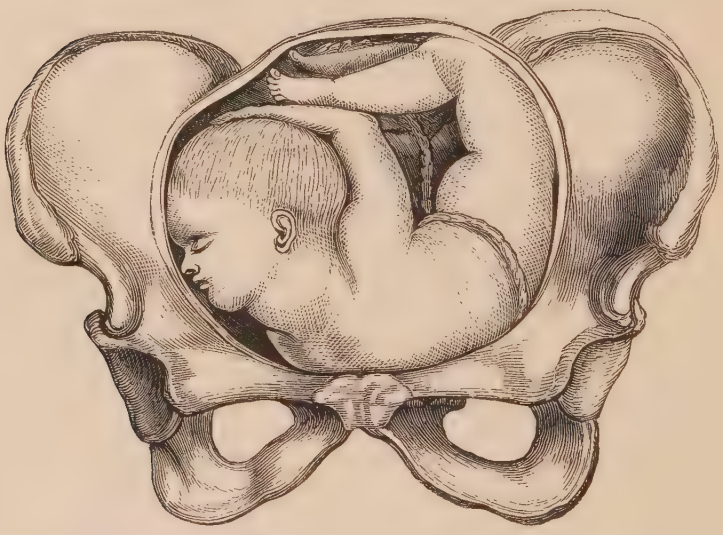
The pains were now nearly absent, and when recurring very slight. I could distinctly make out presentation of

right breast, and that the child was doubled back, the head resting in the right iliac fossa.

I at once determined to turn the child, and on passing my left hand into the uterus, which was tolerably firmly contracted, I found the state of matters as indicated, and the feet of the child turned up and resting above and upon the back of the child's head. Without much difficulty I seized a foot, and by gentle extraction delivered the child alive.

It was an eight months' child, and only survived about ten minutes.

Fig. 3.



Remarks.—The case is interesting as one of rare presentation. Perhaps if the labour had been active, seeing that the child was premature, and the mother's pelvis of fair size, nature unaided would have delivered the child. Under the circumstances I deemed it best to deliver at once by turning. It is also interesting that the child was born alive after so lengthened a prolapse of the cord. However, the position of the child will explain that there could not have been much pressure on the cord.

ON CHOREA IN PREGNANCY.

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The occurrence of chorea in connection with pregnancy appears to me to demand more attention than it has hitherto received. At my request Dr. Woodman published two very instructive cases in the volume of our 'Transactions' for 1866. The observation of these cases and of some others, and comparison of them with the histories recorded by other authors, have suggested reflections illustrative of the nature of the disease which I trust will be considered not altogether without interest.

The relations of chorea with pregnancy have been altogether overlooked in many systematic works on obstetrics, and have received only imperfect notice in others.

As a chapter in the history of pregnancy the complication with chorea claims special interest from us.

But the influence exerted by pregnancy in the production of chorea is so striking that a special inquiry into the relations of these two conditions cannot fail to interest also the general pathologist.

There is some danger, no doubt, in investigating a disease or a group of symptoms in only one of its manifestations, lest we fall into narrow and erroneous conclusions. There is, on the other hand, an advantage in approaching a difficult subject from every possible side. Studiously, therefore, disclaiming the pretension of attempting to explain the nature of chorea by observations taken from an obstetric aspect, I yet hope, by gathering together into one focus a body of evidence and the suggested speculations obtained in this way, to submit a contribution not without use towards the elucidation of a difficult problem in pathology.

I have collected all the cases of pregnancy complicated with chorea which I have been able to find. These I have arranged in two divisions: the first including the cases which recovered, amounting to thirty-nine; the second including the fatal cases, amounting to seventeen. To these are to be added two cases in which the chorea seems to have made its first appearance immediately after delivery. We have thus a body of fifty-six cases as a basis for discussion.

A. *Series of non-fatal cases.*

1. Riedlin relates a case of relapse of chorea in a pregnant woman, ending in abortion. It will be seen that this is a frequent concatenation.

2. Frank relates a case presenting a similar series of events. The patient had had chorea; and early in her first pregnancy she had a relapse. Abortion came on in the fifth month. Recovery.

3. Dubois describes the case of a woman, æt. 19, pregnant for the first time. She had suffered from hysteria. The affection came on in the seventh month; and she was shortly cured without interruption to the pregnancy.

4. Hufeland gives a case of a woman, æt. 19, who, when seven months pregnant, was seized with chorea which was terminated by an attack of acute rheumatism.

5. Hufeland refers to another case of a pregnant woman who had a febrile rheumatism, following which there appeared a convulsive disorder analogous to chorea.

6. Furnes ('Lond. Med. Gaz.') describes a case in which chorea appeared in a woman two months pregnant. She was cured in nineteen days.

7. Mr. Mayo relates the following case:—A woman in the

fourth month had a frightfully disgusting object thrown at her. She continued for two months in a state of extreme nervous illness, but recovered and went her full time, remarking that the child was extraordinarily lively in the womb, and that she was overcome with the sensations it produced. At birth the child, a girl, displayed the writhing motions of chorea, and continued to suffer through life. When about thirty she had the appearance of an elderly child, with a head remarkably small, and a mind hardly removed from idiocy.

8. Mr. Turner's case ('Medical Gazette,' 1838) is as follows:—A woman, æt. 33, recently married, was seized with fits of chorea, recurring daily at 7 p.m.; they were very violent, and were limited to the left leg and arm. She was never quite free from tremor and slight twitchings. There was a general want of bone. She got well in a short time under sesquioxide of iron before the advent of labour.

9. Richelot's case is as follows:—A chlorotic lady, æt. 20, had suffered from chorea some time before marriage. When two months pregnant she had a relapse, which was cured at the end of three months and a half. She had a second pregnancy without chorea.

The late Dr. Ingleby published ('Lancet,' 1840) a very interesting lecture upon the subject under consideration. He observes that "the disease, simple as it usually is, may be sufficiently severe to destroy life, especially when complicated with advanced pregnancy." He relates the following cases ending in recovery.

10. Dr. Ingleby's first case. A lady was attacked with chorea when in the sixth or seventh month of her first pregnancy, having suffered from the disease during her childhood. Previous to the completion of the term of pregnancy she recovered under the use of carbonate of iron and gentle aperients.

11. Dr. Ingleby's second case. This case occurred in a pale, delicate woman of nervous temperament. Severe vomiting, obstinate constipation, and headache supervened almost immediately on conception, but the spasmodic contractions did not appear until the fourth month. The stomach was then very much relieved. The muscles of the right side of the neck and right arm were severely affected; at one time they were in a state of rigidity, at another the head was drawn to one side and the chin towards the shoulder. The attack occurred almost daily and usually lasted about twenty minutes, and the slightest excitement or mental emotion would produce it. Purgatives gave great relief, but the convulsions continued occasionally for some time after delivery.

12. Dr. Lever relates five cases which recovered. First case. ('Guy's Hospital Reports,' 1847.) Chorea broke out in the third month of the first pregnancy; memory was weakened, and it was feared the patient would become imbecile. She was delivered at term of a live child. The chorea then ceased and she recovered.

13. Dr. Lever's second case. The same patient when not three months in her second pregnancy had symptoms of chorea again. Fright caused hæmorrhage and premature labour at five months. Chorea then ceased.

14. Dr. Lever's third case. A woman borne down by poverty, and who had fretted much, had chorea when about three months gone in her first pregnancy; mental disorder followed, marked by incoherent talking and not always returning a rational answer. There was no albumen in the urine. She had sulphate of zinc and purgatives. The chorea ceased. Labour came on at term; live child.

15. Dr. Lever's fourth case. A woman married at twenty. All went well in her first pregnancy. Chorea set in at the end of the second month of her second pregnancy. At five months it still continued. She had a dollish appearance

No albumen in the urine, sp. gr. 1031. Had sulphate of zinc and purgatives. Chorea continued until labour at term; child alive.

16. Dr. Lever's fifth case. A woman, æt. 20, had chorea when a child. In her first pregnancy there was no chorea. When three months gone in her second pregnancy had a fright and miscarried; anæmia and slight chorea ensued. In her third pregnancy chorea came on at four months; her memory became impaired. She improved, and the chorea ceased on delivery at term. Child alive.

17. Scanzoni's case (1859). A woman, æt. 24, had chorea in the fourth month of first pregnancy. No ascertained cause. It lasted till the ninth month, when premature labour set in. The chorea disappeared on the removal of the after-birth.

18. Dr. F. Mosler's case (Virchow's 'Arch.,' 1862). A woman, æt. 24. She had been quite healthy until 19, when she was attacked with chorea. It lasted six months, when, on the appearance of menstruation, it vanished. At 21 she was pregnant; no chorea. She had afterwards joint affection, and menstruation was suspended for a year. Then, being two or three months pregnant, she had a fright, and chorea appeared. She recovered after having been delivered normally at term.

19. Helfft's cases (Schmidt's 'Jahrb.,' 1848). A strong young woman, æt. 20, had been affected with chorea in childhood. She fell into the water in the first month of pregnancy. Chorea set in directly. She aborted in the fifth month and recovered.

20. Dr. Helfft's second case. A woman, æt. 23, had chorea in the third month of her second pregnancy. No known cause. It lasted till the end of pregnancy, and ceased after a normal labour.

21. Ungen's case ('Journ. de Méd.,' 1764). A weak, delicate primipara, æt. 18, had chorea in mid-pregnancy. She recovered, and labour was natural.

22. Iland's case ('Hufeland's Journal,' 1807). A primipara, æt. 23, had suffered from dysmenorrhœa. Chorea began in the sixth month after an accident. She recovered under sulphate of zinc, and labour occurred naturally.

23. Bezold's case ('Holscher's Annalen,' 1839). A primipara, æt. 19, had chorea in the first half of pregnancy. She recovered, and labour was normal.

24. Dr. Romberg gives three cases ('Diseases of the Nervous System,' Sydenham Society). 1. A primipara, æt. 20, had chorea at ten. At the beginning of pregnancy she fell into the water; chorea followed. She aborted at six months, and recovered six weeks afterwards.

25. Dr. Romberg's second case. A woman, æt. 23, had chorea in the second month of her second pregnancy. She had not had chorea before. It lasted till the end of the normal term, when she was delivered naturally and recovered.

26. Dr. Romberg's third case. A girl had chorea with imperfection of speech before puberty. At 17 she had chlorosis; at 18 she was pregnant. Chorea appeared in the early months. Under zinc and cold affusions it disappeared in the middle of pregnancy. Chorea recurred in her second pregnancy; was cured by the same means; delivery was also normal. She escaped in her third and fourth pregnancies.

27. Dr. T. K. Chambers' case ('Clin. Lect.') Sarah C—, æt. 23. Six months pregnant for the first time; was attacked with acute rheumatism and chorea at the same time. She had a cardiac complication which subsided along with the

rheumatic symptoms, but the chorea continued until the child was born at the full time, and then was cured.

28. Mr. Pye-Smith has kindly supplied me from memory with the following case, which was also seen by Dr. Habershon. The patient was about 23, married, and her first pregnancy proceeded favorably. She had a rather wild young husband, who frightened her severely some weeks before confinement. Three weeks afterwards she became much excited and alarmed, upon which severe convulsions ensued, issuing in chorea. Her movements were most violent, once at least throwing her out of bed. She entirely recovered under purgatives, zinc, and steel, and at length continued free from the disease.

29. Trousseau ('Clin. Lect.,' Eng. ed., 1867). Æt. 20, admitted suffering from a first attack. Convulsive agitation extreme. Right leg and arm paralysed. Ideas confused, strangely talkative. Took nux vomica; tetanic jerks quickly followed. Strait-jacket put on. Morphia in large doses. The spasms very severe, but at length yielded completely. She left comparatively well at end of twenty-seven days.

The following ('Obstetric Transactions,' 1866) is a summary of Dr. Woodman's cases:

30. Case 1. Came under the care of Dr. Down at the London Hospital. Chorea appeared when six weeks gone in her first pregnancy. The immediate cause was a fright. She recovered; but premature labour set in at the eighth month. Child alive.

31. Case 2. A girl, æt. 18, pregnant for the first time, six and a half months gone; admitted to the London Hospital. Chorea had lasted for three months. Chorea ceased before the term of gestation. Child born alive; flooding. Some twitches of chorea reappeared, but ceased in three days. It was ascertained that there was no albumen in the urine, but some sugar was found. She had chorea at the age of seven; and

this had persisted more or less until the establishment of menstruation at thirteen.

The following very instructive case was admitted at St. Thomas' under Dr. Peacock, and was subsequently seen by myself.

32. P. H—, æt. 20, admitted on 4th July, 1865. Married; has had two children. The first labour was instrumental; the child stillborn. In her second pregnancy had chorea for a few days; labour protracted; suckled sixteen months; child now three years old. Now six months gone in third pregnancy. She menstruated once only since last pregnancy. Six weeks ago involuntary (?) movements in left hand and left leg appeared; the leg was more under control than the hand. Is now very weak and desponding. Tongue clean; easily and steadily protruded. Heartburn; appetite bad; no sickness. Pulse 92, sharp; no cardiac murmur. Sleeps very badly. Mind not obviously impaired beyond the despondency. Ordered sulphate of zinc and valerian.

July 20th.—Has not improved; choreic spasms more frequent. Yesterday rambled a good deal and did not sleep; took morphia, which procured rest. Pupils natural; pulse not accelerated.

28th.—Delirium continues; more constitutional disturbance. Seen by Dr. Barnes, who ordered liquor ferri peracetatis and calumba. She has been taking four ounces of wine daily. Beef-tea enemata; blister between the scapulæ.

August 4th.—Delirium continues; cannot answer rationally; the movements are less violent. Pulse 128, soft, feeble. Is very prostrate; lies upon her back. Dr. Barnes, regarding her condition as critical, advised immediate induction of labour. Next day her condition was aggravated. Irritative fever very marked. Had passed a restless night; delirium; cannot understand questions; tongue dry in centre; pulse 120; skin moist. Choreic movements continual. A gum elastic catheter was passed two inches into uterus between walls and membranes, and secured *in sitú* with a tape.

6th.—The catheter was found displaced; another was passed, and a nurse set to watch her. At 4 p.m. the os uteri had dilated to the size of a crown piece. At 6 p.m. it was further dilated. The membranes were now ruptured. She was delivered of a seven months' child at 7 p.m. The uterus contracted well, casting the placenta. At 8.45 p.m. pulse 124; still choreic movements.

On the following day she appeared somewhat relieved; recognised her mother; still delirium. Slight choreic movements. Takes little notice of anything passing around her, not even of flies settling on her face. Pulse small, feeble, 110; has taken nourishment better.

9th.—Chorea slight; breasts full of milk. Belladonna plaster applied with a view of suppressing secretion.

10th.—Passes all her urine in bed. Expression much more natural; more intelligent; attempts to protrude her tongue. In the evening she was much worse: pulse 140; very prostrate; face and extremities colder. Brandy.

11th.—Rallied; no involuntary movements except when excited; puts out her tongue when told; pulse 116; slept comfortably. Passed no urine to-day. Some drawn off was found acid, and containing a large amount of albumen.

During the succeeding five days she seemed to gain strength; the pulse ranged from 96 to 76. Choreic movements only when excited, as by seeing her friends, or on being disturbed, or on being washed.

16th.—The secretion of milk is stopped. Pulse 58. Appears to understand questions, but does not always answer; does not recognise her child as her own; expresses aversion to it.

17th, 18th, 19th.—Gaining strength; takes food better, but will not speak unless spoken to. Urine drawn on the 19th, acid, sp. gr. 1020; slightly albuminous.

26th.—More excited; had a restless night, trying to get out of bed; threw down the screens, and seemed much alarmed; laughed wildly. Pulse 68; tongue clean, no pain. continually moves her hands about, but controls the movements if told to do so.

After this she became more violent; quarrels with the

patients, and bites; is very irritable; swears. On September 1st the urine contained neither sugar nor albumen; 0·4 per cent. of urea, crystals of urate of soda and of uric acid.

She went on gaining bodily strength, but mania became developed; she required restraint, and was removed to Bethlehem.

Dr. Levick reports ('American Journal of Medical Science,' 1862) three cases of chorea associated with pregnancy. The following two cases were non-fatal.

33. Æt. 35, pluripara; never had chorea before; had sickness during pregnancies. In her last, the third labour, suffered from "great nervous exhaustion." About the end of fourth month of fourth pregnancy, incontrollable nervous movements in both feet. Symptoms were much aggravated by the sudden death of her physician, which caused her a great shock. She improved under Hoffman's anodyne and generous diet, but some slight nervous disturbance continued until delivery. The child was large, male. Retention of placenta. She had "circumscribed metritis," during which she suffered greatly from disorder of her nervous system, though of a character different from that during pregnancy, almost amounting to puerperal mania. She recovered completely.

34. Dr. Levick's second case. Æt. 17, married. Had "always been nervous;" had a slight attack of chorea about a year ago. Three months pregnant. Until a fortnight before had been well, but "nervous." At this time she was frightened; and about an hour afterwards had twitchings of the arms and legs. These increased in severity. She recovered under use of opium, purging, and iron. She was subsequently delivered of a dead child, and had no return of chorea.

35. The first of Sée's cases is as follows:—The patient had chorea at twelve; she became pregnant at twenty.

During the last month she became melancholy, capricious, and chorea broke out in the muscles of the face and left arm. She came for treatment to the Beaujon. Labour occurred a few days after. During labour the choreic movements were suspended; but they recurred for four or five days afterwards, attended by severe pain in the left wrist.

36. Sée's second case. A woman, æt. 32, was admitted at the Beaujon with general chorea, which had lasted three weeks. It had come on a month after a regular labour. She had had chorea when fifteen years old.

37. A case reported by Dr. Lawson Tait, which in a subsequent pregnancy ended fatally (see Fatal Cases, No. 10).

38. The following case by MM. Gübler and Dumont ('Bullet. de Thérapeutique,' 1865) is especially interesting as regards treatment:—M. F—, æt. 22, menstruated at fourteen, married at nineteen, had a first attack of chorea at five. It followed a severe fright; it lasted eight months. She had a slight attack of chorea in her first pregnancy. When next pregnant she was attacked at five months; the chorea was very violent. There was intermittent anæmic souffle in the carotids. The convulsions were worse at night; she hardly slept. She took rather large doses of bromide of potassium; soon slept better, and recovered in a few days.

39. I have received the following case from my friend Dr. Woodman:—A primipara, æt. 20, had had one attack of chorea when seventeen which lasted two months. No clear history of rheumatism, but she has a systolic bruit at the heart's apex. She married at nineteen, and was again attacked with chorea when about seven months pregnant. She ascribes this to fright (thinking her husband was killed). She went her full time. Choreic convulsions, bilateral, continued all through labour, and for two months afterwards. The child was unaffected, and up to the time of the first dentition was free from fits or any other disease.

I will now adduce a series—

B. *Of seventeen fatal cases.*

The first five are from Dr. Ingleby.

1. In one of these the disease supervened upon marriage, and pregnancy was the presumed cause. The patient died immediately after admission into the infirmary.

2. In the second fatal case pregnancy was not even suspected, but on examination an ovum corresponding with the third or fourth month was found in the uterus.

3. In the third fatal case ulceration was discovered in the intestines.

4. In a fourth, which was a severe and protracted case, the patient died during a paroxysm, and nothing was discovered besides great turgidity of the brain, which Dr. Ingleby regards simply as an effect of the disease.

5. The fifth fatal case is related in greater detail. The subject was a very stout woman of short stature and healthy appearance. She was bled in the arm six weeks previously to the seizure, on account of headache. The attack commenced on the 11th day of the month with an involuntary action of the muscles of the face, strictly resembling chorea, and extending to the left arm. She was again bled. The following four days there was a gradual extension to the muscular system, generally attended with a marked rapidity of pulse. Leeches were applied to the head. In the evening of the fifth day from the seizure the symptoms assumed a more aggravated character; and as it was supposed that the period of gestation would terminate on the 24th instant, the propriety of rupturing the membranes was suggested. An opiate was administered, but the stomach rejected it. The pulse was 90 and soft; and the pupils permanently contracted. In a few hours she was awakened, it being about 2 a.m., with an excruciating pain in the abdomen and back,

which came on at intervals, and was supposed to be pain of labour. The pulse was exceedingly frequent and rather weak; the speech rapid, tumultuous, loud and unceasing; the spasms were universal, and so violent that it required a number of persons to control her whilst examination was made. During this time she was perfectly sensible, but greatly agitated both in mind and body. The vagina was excessively relaxed. The os uteri was also relaxed, admitting two fingers. The head presented, so the membranes were ruptured. A dead child was soon expelled, and the placenta followed. Delivery produced no sensible relief, and the agitations continued with their former violence. Opium was followed by greater agitation as soon as the first sedative effect had passed off. The violence of the spasms increased next day, and she sank exhausted. She had been conscious of the movements of the child a few hours previously to delivery. Examination P.M. No apparent decomposition. A considerable quantity of clear serum was found between the arachnoid and pia mater, over the whole surface of the brain. The substance of the hemispheres was firm; the sections followed by more bloody points than usual. Upon raising the corpus callosum, its inferior portion, together with the septum lucidum and fornix, was found considerably softened, and the latter was quite pulpy, especially at the posterior part. The medulla oblongata and cerebellum were of a softer consistence, though not in an actual state of ramollissement.

Dr. Ingleby remarks that the only mental impairment in this case was an irritability of temper foreign to the patient's nature.

Dr. Tuckworth relates ('Brit. and For. Med.-Chir. Rev.' Oct. 1867) the following case:

6. A young woman, aged 20, was admitted into the General Hospital at Vienna with cholera. She was four months pregnant. She died in spite of all remedies. The pericardium was healthy; but sprouting from the mitral and aortic valves were shining vegetations.

7. Dr. Robert Lee's case ('Clinical Midwifery,' 1848). A

woman was admitted at St. George's Hospital in the sixth month of her second pregnancy, suffering from chorea. She was very violent, at times manical. Premature labour came on spontaneously. She died seven hours afterwards. The right kidney was found absent. I saw this case myself, being at the time a student at the hospital. The cerebral complication was very marked. The brain and spinal cord were considered healthy. There were some small vegetations on the mitral valve.

8. A case related by Mr. Samuel D. Hine ('Med. Times and Gaz.,' 1865) is very instructive. "Mary Ann S—, æt 21, a plethoric well-nourished young woman, eight months advanced in her second pregnancy, had constant twitchings of the arms and legs, sleeplessness, rather severe frontal pain, quick pulse, slight thirst, and some difficulty of speech and deglutition. She had suffered from chorea at the age of 13. Her mother had also suffered in like manner when young. Ten days before seeking advice she believed herself quite well: she then underwent a severe emotional shock. After this she was nervous and depressed, and the involuntary twitchings increased. Leeches and purgatives were prescribed. On the following day she was worse. The jactitation was more constant and more forcible; she had considerable difficulty in standing upright; her speech was more jerky and obstructed. Steel and opium were administered. Next day the jactitations were so severe that it required four women to hold her down; she had had scarcely any sleep. She was cheerful and perfectly sensible; having no pain. It was agreed to induce labour. Chloroform being given, it was found upon examination that parturition had already advanced. She was delivered without assistance beyond being held on the bed, so severe were the involuntary convulsive movements. No diminution in these took place after delivery.

Notwithstanding several doses of morphia and afterwards chlorodyne, she got no sleep, but sank exhausted on the day following labour, after an illness of about fifteen days only.

Autopsy seven hours after death.—There was an unusually large quantity of spinal fluid, and it appeared turbid and pinkish in the dorsal region. In the cervical region the cord and membranes seemed natural, but from the seventh cervical to the second lumbar vertebræ there was intense redness of all the membranes, and the arachnoid appeared much thickened and of a fatty consistency. About the middle of the dorsal region the substance of the cord was considerably softened, presenting the appearance of thin cream. The membranes of the brain rather congested; and there was slight opacity of the arachnoid on the surface of the right hemisphere. The other organs of the body were quite healthy.

Mr. Hine has kindly informed me, in reply to my inquiry, that the child was born alive, and that it continued remarkably healthy a few months afterwards.

9. Trousseau ('Clin. Lect.,' 1867). Æt. 24, suckling child at five months; had a sharp quarrel and soon became very irritable, then choreic movements. Never rheumatism. Took strychnia, which produced tetanic spasms; then opium. Died.

Slight injection of cerebral meninges without large serosity in ventricles. Brain normal. No clots in heart or vessels. On mitral valve polypoid concretions; valvular endocarditis.

10. Dr. Lawson Tait ('Dublin Journ. of Med. Sc.,' 1868) relates the following:

E. T—, blonde, had rheumatic fever in childhood; the last attack when 16, ending in chorea, which continued several months. Married at 22. In first pregnancy chorea set in at fourth month; it ceased, she said, "the moment the infant was born." The child of this labour is choreic.

Second pregnancy, chorea came on earlier and was more violent; it stopped with parturition. A few weeks afterwards chorea appeared during an attack of typhus.

Third pregnancy, movements began before she knew she was pregnant; abortion at third month was followed by a cure.

Fourth pregnancy quickly succeeded, and chorea manifested itself immediately at three months and a half. The movements were extremely violent; tongue bitten; sleep impossible; urine had sugar. Disease becoming aggravated abortion was induced. The movements ceased for many hours, but then returned with augmented severity. Kept under chloroform for twenty-four hours; death took place on third day after abortion with symptoms of apoplexy.

Post-mortem examination.—A clot of effused blood was found on anterior part of velum interpositum towards left side. Heart healthy.

11. Dr. Prichard mentions the case of a girl of loose life, æt. 19, who had violent chorea in connection with pregnancy. She aborted and died.

Post-mortem examination.—General congestion of cerebral mass, more especially of choroid plexus.

12. Case 2 of Dr. Levick ('Amer. J. of Med. Sc.,' 1862) æt. 17; pregnancy the result of seduction. Symptoms began probably in fifth month; she would hide herself; fell down stairs. After being bitterly rebuked by her mother became violently convulsed. Every part of the body was in violent agitation; required to be held in bed. The face was in violent motion; eyes constantly wandering; unable to articulate except in syllables; she still retained reason and implored for relief. She and her mother denied the pregnancy. Morphia and chloroform gave transitory relief, followed by aggravation of the convulsions and death.

The uterus contained a six months' fœtus. The brain was very much congested throughout; the heart small and firm, with a bead-like deposit on the aortic valves.

13. The three following fatal cases are taken from Dr J. W. Ogle's memoir ('B. and For. Med.-Chir. Rev.,' 1868).

The first case was reported to Dr. Ogle by Dr. Day, of Stafford. A young woman, in the third month of pregnancy, was admitted suffering from occasional attacks of chorea.

The involuntary movements of the voluntary muscles were strange and grotesque, but not at first violent; they soon, however, became so. No treatment seemed to benefit her. Dr. Day suggested that the uterus should be emptied; this was not assented to. Ice-bags to the spine did no good. Chloroform procured some rest and *disturbed* sleep, but at last she sank thoroughly exhausted, retaining consciousness to the last.

Post-mortem examination disclosed everything natural except the membranes of the spinal cord, which showed evidence of intense inflammation.

14. The following case was communicated to Dr. Ogle by Dr. Boyd, Physician to the Somersetshire Asylum. C. C—, æt. 23, married, six months pregnant with her second child, was the subject of the most severe spasmodic action of the limbs and neck. She was able to answer questions, but with great efforts. Tongue moist and white; swallowing difficult. She was labouring under severe bronchitis, and her breathing was difficult. Œdema had existed three weeks when premature labour occurred; the fœtus had apparently been dead two or three days. On the following morning she died.

The brain weighed forty-four ounces; was congested, but natural in structure. The spinal cord was soft and pulpy throughout its whole length. It was examined by Mr. Lockhart Clarke, who reported that "only the lower part of the lumbar enlargement remained entire, and this was not sufficiently hardened to admit of making thin sections; the lower portion of the dorsal region which had been slit through was evidently softened; small fragments examined under the microscope exhibited chiefly an admixture of granules, with some compound granular corpuscles, without any remarkable alteration in the condition of the nerve-fibres. This condition resulted, no doubt, from an early stage of softening, in which a granular fluid exudation was poured out. Just below the middle of the lumbar enlargement the tissue was perfectly pulpy, of the consistence of cream, and a small portion

of this picked out and placed on a slide, with as little disturbance as possible, showed scarcely anything but broken nerve-fibres mixed with granules, and some compound granular corpuscles. Almost every fibre had assumed the form of the well-known globular or oval masses of myalin or white substance, so that, under a low power, the arrangement resembled the cellular structure in a section of wood or stem of plant. In the lower part of the lumbar enlargement that had not been slit the grey substance was evidently in a state of disintegration."

15. Harriet S—, æt. 17, admitted 24th April with well-marked chorea affecting the whole body. She had suffered since Christmas. Catamenia absent three months; had measles the previous summer; never had rheumatism; had lumbrici. She was pregnant, and her mind much distressed in consequence. The heart's action was quickened and irritable, and a systolic bruit existed. The urine was free from albumen and sugar. The chorea soon became more violent, delirium and mania followed, and she died twenty-four hours after the disease had become so much worse.

Autopsy.—Cerebral membranes much congested; the brain itself "wet" and pitted on the surface; the puncta vasculosa increased. No fluid existed in the ventricles, and the central parts were much softened, and easily broken down by water falling upon it. The veins at the base were much congested. The spinal cord was hardened in chromic acid and examined by Mr. Lockhart Clarke. In the cervical and lumbar portions no appreciable alteration of structure was discovered; but in the lower part of the dorsal region, at the ninth dorsal nerves, the anterior columns were swollen, and formed a conical protuberance of considerable size. At this part extensive morbid changes had been going on, the white substance had been softened and was now very friable under the action of chromic acid. In two or three places there were circumscribed effusions of blood, surrounded by granular exudations, which had probably occurred before the effusions.

The uterus contained a fœtus of about four months' period.

The heart was firm; the mitral valve-flaps were slightly thickened, and on the auricular surface some beads of soft fibrinous deposits of recent origin, and easily removable, existed.

16. The following case, which occurred in Professor Louis' clinique, was reported by Dr. Aran ('L'Union Médicale,' 1851). A weak, scrofulous girl, menstruated at 16, married at 18, had a first child normally at 19. Being in the fifth month of her second pregnancy, suffered severe terror, which was followed by delirium and suicidal disposition. The chorea set in eight days later; it continued, the movements becoming very violent, and soon mania followed. Sulphate of zinc, leeches, cold affusions, opium, were tried without effect. When moribund, the fœtus was found in the bed, delivery having occurred spontaneously.

Autopsy revealed a healthy spinal cord, and only an increase of the punctate appearance of the brain.

17. The following has been communicated to me by Dr. Woodman. A primipara, æt. 18, had scarlatina when about three and a half months pregnant. She did not abort. It left her with a systolic mitral murmur. "I find this," says Dr. Woodman, "a very common result of scarlatina." About six weeks before delivery choreic movements, bilateral and very violent, set in. In the labour these became exchanged for eclampsia, and she died after giving birth to a dead child, male. The urine was albuminous all through pregnancy.

Post-mortem examination could not be obtained.

In the two following cases chorea followed upon delivery. The first is from Romberg. "It is quite exceptional," he says, "to find chorea occurring after delivery. But a woman, æt. 47, was sent to the hospital who, nine years previously, had been attacked with chorea subsequent on a severe and tedious labour."

An analogous case is related in Dr. Ogle's memoir. A

married woman, æt. 26, had had two children. Chorea came on shortly after the last confinement, four years before admission. Rheumatic fever had appeared two months before admission; from this she had recovered. For some time past she had suffered from periodical metrorrhagia. Jactitations were violent all over the body equally; she could hardly speak or swallow; she complained much of headache. She died exhausted.

The scalp vessels and meningeal veins were gorged with blood. The grey substance of the brain was dark; the puncta large and numerous. Pons Varolii and medulla oblongata were very congested. The spinal cord was not examined. There were slight fibrinous deposits round the mitral orifice on the auricular surface. The uterus was large and hard. The neck and lips were much, but superficially, ulcerated. Extravasated blood existed in the ovaries in cysts.

The *relation of the menstrual function* to chorea is in many cases striking. The frequency with which chorea appears before puberty, and ceases either immediately or gradually after the establishment of menstruation, is remarkable. The association is marked in other ways. Dr. Harrison ('Lancet,' 1828) relates a case in which chorea was connected with precocious menstruation at eight years of age, and in which the fits seemed to coincide with the menstrual flow. Several authors relate cases in which suppression of menstruation from other causes than pregnancy was followed by chorea. Dr. Sunderland ('Med.-Chir. Rev.,' 1829) details a case of a girl attacked by chorea in the beginning of January, who rapidly became so bad that she had to be secured in bed. On the 6th February the catamenia appeared, and the convulsions ceased, but recurred with equal violence on the 8th, when the flow subsided, and she died on the 12th.

Dr. Barclay relates a case ('Med. Times and Gaz.,' 1853) of severe chorea at sixteen, with amenorrhœa.

Dr. Murray, of Newcastle, relates a fatal case in a young lady, æt. 21, at the menstrual period.

Dr. Ogle relates the following case:—A maid-servant, æt.

17, was admitted into St. George's with violent chorea, which had been coming on gradually for fourteen days. There had been no fright. The catamenia had been absent since three months. She died in a few days. Great congestion was found in the nervous centres. No valvular disease. The uterus and ovaries were unusually large, the uterus being much congested, and the ovaries containing several cysts. The relation here with the menstrual function is the more striking, from the absence of valvular disease.

The next case is also from Dr. Ogle. A girl, æt. 15, had had chorea at twelve, before a catamenial period. Menstruation became irregular, and the fits returned. She died exhausted. The veins of the cord were much congested. Fringes of fibrin-coagulum on the mitral valves. Adherent fæces in intestines. Generative organs vascular.

Amenorrhœa is frequent in girls subject to chorea. It does not, indeed, follow that the absence of menstruation is the cause of the chorea.

In many cases there is, no doubt, a cause antecedent to the amenorrhœa; one which entails both this and the chorea. Anæmia is such a cause. Here, as with pregnancy, we must not look upon amenorrhœa as an independent cause, capable *per se* of producing chorea, but as an exciting cause capable of evoking chorea where the diathesis or predisposition exists.

A remark of Dr. D. Davis is worth bearing in mind. He believed that disordered menstruation was much more frequently the effect than it was the cause of other diseases.

The state of the urine in connection with chorea is a subject that demands further investigation. What is known upon it is mainly drawn from the observations of Walshe ('Lancet,' 1849), Todd, Bence Jones, and Beale. Dr. Walshe has observed four phases in the urine of acute chorea. The *first* is marked by a febrile character, high specific gravity, deep colour, strong odour, and abundance of lithates. The *second* phase is marked by great excess of urea. The *third* by the presence of oxalates. The *fourth* by abundance of phosphates. Todd and Bence Jones generally confirm the above results. Dr. Beale noticed a large amount of solid

matter, the increase being principally caused by the organic matters. He also often found a considerable increase of sulphates. He did not find albumen or sugar.

Dr. Fleetwood Buckle, R.N., has favoured me with notes of observations made by himself upon four cases. During the disease the urine ranged in sp. gr. from 1025 to 1032. After recovery the sp. gr. fell to 1018 or 1020. He generally found phosphates and urea in excess. He did not find excess of sulphates, or any albumen or sugar. Dr. Lever found no albumen. In my case albumen was very copious for a time. In a few cases sugar has been observed.

We are justified in concluding that in the majority of cases the specific gravity of the urine is sensibly raised.

That this is chiefly due to increase of phosphates and urea.

That the intercurrence of albumen or sugar is only occasional, and has no direct relation to the chorea.

The constancy with which an excess of phosphates and urea is met with seems to indicate a pathological relation. The excess of phosphates may be taken to be a measure of the waste of nerve-matter, the impairment of function of the brain being often very manifest. The excess of urea would not appear from recent researches to be an index of the waste of muscle. Bischoff and Voit, Fick, Wislicenus and Frankland think the mechanical force of muscles is derived from the oxidation of hydro-carbonaceous material mainly; and Dr. Parkes ('Proc. Roy. Soc.,' 1867) came to the conclusion that, unless nitrogen be found to disappear through the skin, it must be supposed that muscular force is derived from the carbo-hydrates, the amount of nitrogen excreted during active exercise being lower than that excreted during a period of rest, though in the period of rest following work it is slightly increased.

The causes of chorea.

Guersant may be cited amongst those who deny the influence of terror in causing chorea. He says it is not the

fright which causes the chorea, but the disposition to chorea which causes the patient to be so easily frightened.

But this is simply another way of expressing the fact that to produce chorea, as many other diseases, there must be a predisposing cause or condition, and then an exciting or evoking one, and that fright may be such an exciting cause amongst others.

It scarcely appears reasonable to disregard the influence of *terror* or psychical shock as an exciting cause.

The quick sequence of chorea upon sudden terror has been observed too frequently to be put aside as accidental. Romberg mentions the case of a girl, aged ten, under his care, who was violently alarmed one morning by a dog jumping up at her and barking, who was seized with chorea the same evening.

Dr. Bright related a remarkable case. A boy, æt. 9, having got well of an attack of chorea, was sleeping with his father. The father had an attack of apoplexy, which so frightened the child that "from that time the chorea returned."

In Dr. Ogle's memoir is the following:—A girl, æt. 17, had had a fright six or seven months before, which deprived her of movement and speech for a quarter of an hour. Chorea, with twitching of the muscles of the face and upper limbs, followed. The catamenia absent ever since. There had been no previous attack of chorea. A loud bruit was heard with both cardiac sounds. This disappeared before she sank. An abscess was found in the anterior mediastinum. The heart was healthy in all respects. Brain natural. Much fluid in the arachnoid cavity of the spinal cord, otherwise the cord was natural.

The following case is also from Dr. Ogle:—A little girl, æt. 7, of nervous disposition, three weeks before admission had been pushed into a ditch and greatly frightened. She remained greatly excited, and ten days afterwards choreic movements in the limbs of both sides appeared; the speech also became embarrassed. The action of the heart was

natural. She died within five weeks of the fright. The nervous centres and the heart were natural.

Another case taken from Dr. Russell, of Birmingham ('Med. Times and Gaz.,' 1865), seems free from ambiguity. A child, æt. 7, quite free from rheumatic tendency, was locked up in a dark room by a servant girl. His screams aroused the neighbours, and he was taken out through the window. Next morning the boy had chorea. He was afraid to go to bed in the dark, and screamed in his sleep; his memory became impaired. The choreic movements were confined to the right side. Repeated examination resulted in finding no abnormity in the heart.

In another case, that of a girl, æt. 17, previously healthy, chorea was brought on by fear of drowning, being in a boat which was filling. The alarm effected an entire change in her mental condition; she became extremely nervous and timid; at times "awfully passionate." When examined a month afterwards a soft systolic bellows sound was heard at the apex of the heart. She perfectly recovered in seven weeks; but the bellows sound underwent no change.

I have adduced these cases of chorea supervening on psychical shock in order to keep present to the mind the nature of the evidence upon which the proposition that terror may be an exciting cause of chorea rests. Similar cases may be greatly accumulated. But these seem to be sufficient to place the reality of the influence of shock beyond question. If this influence be established, it follows either that heart disease and embolism are not necessary or universal factors in the production of chorea, or else that terror or psychical shock may almost instantly cause the deposit of fibrin-bands upon the heart-valves, to be followed almost as quickly by embolism in the nerve centres.

In recent years two very interesting speculations—to some extent capable of being resolved into one—as to the etiology of chorea—have been supported by a large amount of evidence. The first speculation is that chorea is the effect of rheumatism, the other that it is the effect of embolism. The frequent complication of rheumatism with endocarditis and

deposit of fibrin on the valves of the heart serves as the connecting link between rheumatism and embolism. I propose to subject this theory in its compound and simple forms to clinical analysis.

Dr. Copland (Article "Chorea," 'Dict. Practical Medicine') claims to have been the first to show the connection between chorea and rheumatism, having published a fatal case in the 'London Medical Repository,' 1821. Since this date the association has been frequently dwelt upon; and gradually the opinion has gained force that this association is constant and necessary. Dr. Babington says ('Guy's Hosp. Reports,' 1841) that Dr. Addison first directed his attention to the fact that "out of a very large number of cases of chorea seen by him, only two had been without a decided mitral or left ventricular bruit." Dr. Babington himself found that there was "often, but not always, a soft bruit, analogous to that which occurs in chlorosis and hysteria accompanying the first sound of the heart."

Dr. Henri Roger ('Archives Gén. de Méd.,' 1868, "Recherches cliniques sur le Rheumatisme et sur les Maladies du Cœur chez les Enfants") says there is an interdependence between rheumatism, heart-disease, and chorea—"ils semblent s'appeler les uns les autres." This is not to say that the order of sequence and of causation is rheumatism, heart-disease, chorea. His interpretation of the clinical facts is broader, and, I believe, more correct. He admits, of course, a "cardiac chorea;" but the heart-disease and the chorea may start together and from the same cause, as is the case sometimes in rheumatism and carditis. His cases establish that the heart disease often persists after the cure of the chorea. Again, chorea may be a cause of heart-disease.

He affirms the hereditary character of chorea, and that the influence of fright is exaggerated.

A remark made by Dr. T. K. Chambers is especially interesting in connection with the conclusions of Dr. Roger. He found that, out of thirty-three cases of chorea, in six the affection either began during rheumatic fever or followed

immediately after it, or else rheumatic fever succeeded to the chorea. He, however, made out no connection between the chorea and previous valvular or pericardial tension of the heart, only one of the six above cases having any cardiac affection. He observes that, "considering how very common inflammation of the central organ of circulation is in rheumatic children, and that it is at this age that chorea usually occurs, on the mere doctrine of chances, chorea and heart disease would often coincide."

The embolic theory has been founded chiefly upon the researches of Dr. Kirkes, who contended (1863) that "chorea is the result of irritation produced in the nerve-centres by fine molecular particles of fibrin which are set free from an inflamed endocardium, and washed by the blood-current into the capillaries of those centres."

Dr. Hughlings Jackson ('Lancet,' 1864) has supported this theory with all the weight that naturally attaches to his industry in clinical research and his power in analysis. It has more recently been supported by Dr. Tuckwell. Dr. Tuckwell does not, indeed, localize the embolism so distinctly as does Dr. Jackson, but he is scarcely less absolute on the main proposition.

Dr. Tuckwell's ('B. and. F. Med.-Chir. Rev.,' 1867) opinion is, perhaps, best expressed in the following letter to Dr. Ogle: —"I was glad to find in the post-mortem you made in your fatal case of chorea that the mitral valve was studded with beads of soft fibrin. I have a notion that if the valves of the heart are *carefully* examined in all fatal cases of chorea, similar, though sometimes very delicate, beads will be found. If you should open a body in which this appearance is not found, will you kindly tell me? I am sure the appearance is sometimes overlooked in these cases in the eagerness of the pathologist to find something in the spinal cord. I think I told you of a case I saw in the Hôtel Dieu, where the heart was opened as usual, and put aside as *healthy;* and when the spinal cord was sent to Robin for examination to supply Trousseau with material for a clinical lecture, a German student, who was present and poking about among the *débris*, as

only Germans who wear spectacles can poke, routed out the heart, and found that, when examined minutely, the mitral valve was fringed with very fine and delicate beads of fibrin. This was shown to Trosseau, but he took no notice of it, dilating on a supposed enlargement of the capillaries of the spinal cord. Again, a woman in the fourth month of pregnancy died with bad chorea in the Vienna Hospital, and was brought down to Rokitansky. His assistant, who made the post-mortem, dilated on the pregnancy as the cause of the chorea, and took no notice of the condition of the cusps of the aortic valve, which were *covered with abundant, very delicate, beads of fibrin.*"

These observations are certainly calculated to arrest attention. But I think it hard to conclude that the very delicate beads of fibrin have always been present in the numerous post-mortem examinations in which it is expressly stated that the valves of the heart were healthy. In some of these cases, at least, the valves were carefully examined by competent observers. It is something like begging the question to set aside all the negative facts or to claim them all as positive facts, to invest a conclusion with the force of universality. It is surely better, whilst waiting for further researches, to accept the conclusion as partial only and to the extent of the recorded facts.

I am disposed to submit another limitation or qualification. Admitting that the coincidence of cardiac disease indicated by the sound heard during life, by the observation of the fibrin-beads on the mitral valves after the death, with chorea has been frequently observed, does it follow that this condition of the heart-valves was the immediate cause of embolism and the cause of chorea? If the affirmative be ever so probable in some cases, it appears to me that there is room for doubt in others.

The objection that there are many cases of chorea in which no cardiac murmur can be heard has been met by Dr. Hughlings Jackson by quoting the statements of Kirkes, Wilks, and Andrew, that vegetations are *invariably* found on the heart's valves in patients who have died of chorea. Now, I

believe Dr. Jackson does not seek for a different explanation of the origin of chorea in cases which recover and in those which are fatal. Indeed, when he says his "opinion is that chorea depends on the plugging of *small* branches of the middle cerebral artery supplying the convolutions near the corpus striatum, and that this is often brought about by heart disease, the consequence of rheumatic fever," he makes no distinction between fatal and non-fatal cases.

We are, then, driven to conclude that embolism is a very frequent and a very benign affection, of so little consequence that in the great majority of instances recovery is easy and rapid. This is a proposition which seems to require further proof. I admit readily that embolism is not necessarily fatal, but with onr present knowledge I think we cannot be called upon to admit that it is generally curable.

Dr. Ogle does not accept the theory of embolism, at least in its universal application. He asks, if chorea were owing to the presence of *molecular* fibrinous material in the blood, how can we find an explanation of the fact that chorea is so frequently one-sided, confined, it may be, to certain muscles or series of muscles? But in making this objection he appears to have overlooked the remarkable fact that Dr. Hughlings Jackson had insisted upon this very one-sidedness as the proof of cerebral embolism. Dr. Jackson ('Lancet,' 1864) adduces, "as arguments in favour of embolism, the frequency with which chorea is limited to one side, and that it degenerates into actual hemiplegia."

I think it of more importance to observe that violence, mania, coma, are not one-sided nervous phenomena; that these severe cerebral symptoms appear secondarily as the chorea advances; and that when they appear in the course of other diseases they are not attributed to embolism.

Of more weight is Dr. Ogle's argument that we ought always in fatal cases to encounter lesions (stasis, congestion, or other appearances met with in that condition which goes by the name of *secondary* deposit, the result of mechanical impediment), which, if they existed in such delicate tissues as those of brain and medulla, would be at once apparent. To

this I would add that we might expect that in the fatal cases of chorea, other marks of capillary embolism would have been found, as in the liver, kidneys and spleen, organs so commonly found involved in the mischief of embolism from molecular fibrin or of any mechanical detritus. But of similar corroborative evidence there is little or none. Is, then, this chorea-producing embolism different in its nature from ordinary embolism—is it governed by different laws—is it restricted absolutely in its action to the brain and to one small part of the brain? This is, indeed, possible, but hardly conceivable.

There is a fact that ought not to escape notice in discussing the embolic theory. Rheumatic fever is a very common disease. The complication with heart disease and vegetations on the valves is very frequently observed. Yet how rare is it to notice embolism? Surely in the clinical history of this most common disease, one that has for many years been invested with peculiar interest, one which may be said to be a favorite subject for clinical demonstration and therapeutical experiment, evidence of embolism might be expected to have accumulated.

The multitudinous clinical reports of rheumatic fever make no mention of chorea as an epiphenomenon. If embolism be the efficient cause of chorea, why is chorea almost exclusively a disease of childhood?

This is one difficulty. Here is another—that chorea has often set in almost immediately after terror or some other psychical shock, is a fact too well attested to be set aside to make way for an exclusive theory. It has thus occurred in many cases where there was no suspicion of heart disease. Are we, then, to reconcile these facts with the embolic theory, by concluding that psychical shock may instantaneously cause heart disease, the deposit of vegetations on the valves, and embolism? I submit that the fact that even the most eminent pathologists have always found these vegetations on the valves in fatal cases, does not involve the conclusions that these vegetations were the source of embolism, that embolism was the cause of chorea or of death, or even that

the vegetations existed on the valves at the outbreak of the chorea.

It is quite possible that the cardiac vegetations were themselves an epiphenomenon.

I have a few remarks to make upon the fibrin-beads which, since they have been so diligently sought for, have been so constantly found in the hearts of fatal cases. One cannot fail to be struck, on reading the descriptions of the autopsies by Dr. Ogle and others, with two facts—1st, that these beads are sometimes so small and delicate that they escaped notice by some of the assistants; 2ndly, that they are often of quite fresh appearance, so fresh that they may be supposed to have been *quite recently deposited*. Yet in these very cases the chorea had lasted some time. I cannot help suspecting that in many of these cases, at least, the chorea preceded the vegetations, perhaps caused them. The impairment of nutrition, the degradation of the blood by the accumulation of excrementitious matter in it, certainly increases with the advance of the disease towards a fatal termination. In severe cases albuminuria sometimes appears. What is more probable than that under these circumstances, combined with the feeble circulation of advancing prostration, fibrin-beads should gather upon the valves? It is remarkable that in a large proportion of the cases in which these delicate fibrin-beads were discovered, *no other evidence of endocarditis* is reported, and there was no history of rheumatism. The conjecture thrown out by Dr. Ogle, that these beads may be deposited in the last agony of dissolution, seems to be probably correct.

There is evidence enough to render it in the highest degree probable that shock can bring about an almost sudden change in the character of the blood. I have discussed the effect of shock in a memoir on "Thrombosis and Embolism in Puerperal Women," in the 'Obstetrical Transactions,' vol. iv, 1863. I conceive it to be highly probable that in some cases, especially in pregnant women, the coagulability of the blood is increased by emotion. In addition to this highly probable blood-change, there is a

condition which is beyond all doubt in pregnant women—at least in many—I mean hypertrophy and irritability of the heart.

The effect of shock is strikingly manifest upon the liver. I have seen cases that leave no doubt upon my mind as to the influence of shock in causing sudden jaundice, even acute and rapidly fatal apoplexy of the liver. It may cause anæmia, and in this or other ways may alter the nutrition of the nervous substance, or cause the nerve-force to be wasted—exhausted in wrong directions; thus, again, in a mischievous circle causing or increasing functional disorder of the heart, liver, and other organs.

It is not therefore essential, in order to prove the reality of the embolic theory, to postulate the pre-existence of rheumatism and heart disease.

Structural changes in the nervous centres have not been so invariably found as to invest these changes with the importance of essentiality. Kirkes, indeed, always found pale softening of the nervous centres. In the fatal cases collected in this memoir the state of the nervous centres was not uniform. In some there was "congestion," in one (No. 10, Table 2) there was "a clot of blood in the velum interpositum;" in one (No. 5) "there was a softening of the septum lucidum and corpus callosum;" in three (Nos. 8, 14, 16) there was "softening of the spinal cord;" in one (No. 13) there was "inflammation of the membranes of the cord." In one case it is expressly stated that the brain and spinal cord were healthy (No. 7). In this case there was decided mania.

It must, however, appear probable that, if the nervous centres were always examined with special care, aided by all modern knowledge and appliances, structural changes would be found constantly. It is not to be expected that the changes found should be always the same. Those already observed, although apparently diverse, may yet be interdependent stages or degrees or consequences of one original cause or lesion. There is nothing inconsistent in this, for it is obvious that one patient may die under a less amount of

brain-injury than another—may die, in fact, before the more advanced alterations observed in other cases have had time to be developed.

The question arises, what is the relation of these structural changes to the chorea? Is it one of cause or of effect? I have hazarded my opinion that the primary cause of chorea is not that particular lesion of the brain which Kirkes, Hughlings Jackson, and others, contend for, namely, embolism. It may well be doubted, I think, whether coarse lesion of the nervous tissue be necessary to the early manifestation of choreic convulsions. These may be simply reflex phenomena. The frequency and the rapidity with which chorea is cured seem to negative the hypothesis that it depends upon serious physical lesion.

The extensive softening and disintegration found in some cases are obviously incompatible with long continuance of life, and could only have been developed recently before death, whilst the chorea may have been of long duration. These cases, taken in conjunction with those in which no changes were found in the nervous centres, or, at least, changes so little marked as to have escaped detection, prove that even violent chorea, leading to mania, may exist apart from softening and disintegration of nerve-tissue.

The advocates of the embolic theory seem to have overlooked or underrated the occasional association of softening of the spinal cord with fatal chorea. Yet it must be taken into account. We cannot disregard the significance of such a case as No. 15 of the fatal series, in which Mr. Lockhart Clarke found softening, circumscribed effusion of blood, and granular exudations in the lower part of the dorsal region of the cord, as well as softening in the brain. I think we must infer that the similar lesions in the brain and in the cord were due to the same cause. If that same cause were embolism, we have to conclude that the molecular fibrin detached from the heart and carried in the general stream of the circulation through the aorta had neglected every other part of the body in order to select the capillaries of the corpus striatum and of the dorsal part of the spinal cord.

On the other hand, there is no difficulty in understanding that the nutrition of one particular region of the cord should be impaired through the repetition of the choreic shocks, simultaneously with that of the corpus striatum.

There is another remarkable clinical fact which it is difficult to reconcile with the hypothesis that the chorea is dependent upon lesion of the brain from embolism. In the case related by myself (No. 32, series of Non-fatal cases) the chorea ceased after delivery, but the mental disorder went on and was developed into mania. It is difficult to avoid the inference that in cases of this kind the choreic convulsions and the mental disorder do not depend upon the same cause further than that the chorea may cause the mental disorder. The chorea having started the mental disorder, this may continue, connected probably, with induced cerebral lesion, after the chorea has ceased. On the other hand, I think, clinical observation does not support the assumption that the mental disorder is cured so long as the chorea goes on unabated.

The cerebral complications supervening in the course of chorea invest this disease with special gravity and interest. A feature that is especially remarkable is, that the cerebral impairment is almost always *secondary and progressive.* In cases in which the chorea is evoked by fright, some mental disturbance may be noticed at the onset; whilst in other cases there may, at first, be little or no such disturbance. But soon, irritability of temper, a certain peevishness or waywardness, a loss of balance, impairment of memory, sometimes of articulation, follow. An aspect of stupidity betrays a real loss of intelligence. At first these defects are slight, but they gradually increase in severity, occasionally to the extent of ending in delirium or furious mania.

The progressive ascending character of these attendant disorders, taking frequently many weeks to reach their acme, seems to me to form a strong argument against the chorea and its attendants being due to embolism. Does embolism act continuously and slowly? Is there a small detachment of fibrinous molecules from the heart-valves continuously going on? And, assuming this constant detachment, is the

embolism always directed with unerring instinct—if I may be excused for using the word—to one particular region of the brain? Both these hypotheses seem to me very improbable. Yet, if we exclude them, it is difficult to account for the slow progressive character of the symptoms. The kind of embolism with which we are most familiar, doubtless because it is the most striking in its effects, is sudden.

The evidence drawn from the progressive growth of the cerebral symptoms is strengthened by the clinical history of their decline. This decline in the severity of the mental disorders commonly follows the remission or cure of the choreic convulsions. For example, cases recorded in this memoir show that the chorea has rapidly ceased on the occurrence of labour, at term or prematurely, and if the cerebral complications were not very advanced, these began to mend. Now, it is difficult to conceive that embolism should continue to act just up to the epoch of cure of the chorea, marked by the termination of pregnancy, and then immediately cease, whilst it is a matter of observation that the heart-sounds taken to be indicative of endocarditis and of valvular vegetations continued all the same. I can hardly think that embolism will accommodate itself so closely to the clinical facts.

I submit the following speculation to account for the cerebral disorder. Leaving aside for the moment the question as to the cause of chorea, I think what I have said suggests the probability that the chorea causes the mental disorders. This it does by the repeated shocks which at first stun the nervous centres; these shocks are equivalent to concussions; they exhaust and divert the nervous force, and after a time impair the nutrition of the nervous substance. This hypothesis is perfectly consistent with the clinical facts that the cerebral disorders are progressive in proportion to the duration and severity of the chorea, and if not too far advanced, undergo amelioration with the decline or cessation of the chorea.

The indication in treatment to be drawn from this view is obviously to direct our attention to the cure of the chorea.

The following passage in Dr. Babington's memoir contains a reflection which, I think, challenges attention: "When we recollect how often chorea is caused by a mental emotion; how frequently it is cured or spontaneously subsides; how commonly it disappears, never to return after a certain age; and how seldom it proves fatal, it is difficult to imagine that anything more than a disturbance of function is essential to the production of the disease. There seems, in short, no more reason for supposing change of structure to account for the phenomena of the disease, than for those which occur on the transmission of a moderate galvanic shock through a limb."

I have seen chorea associated with obvious cerebral defect in very young children. I have seen it in deaf-and-dumb children, combined with idiocy of congenital date. These facts are not, indeed, incompatible with the hypothesis of embolism; but it does seem a little arbitrary to refer them and all other cases of chorea to embolism.

With unfeigned deference I would ask whether Dr. Jackson's theory, that unilateral or even general chorea depends upon capillary embolism of the corpus striatum, will account for chorea of the diaphragm, larynx, and heart. I have notes of such a case which I saw when a student in Paris under Chomel. The diagnosis rests upon the authority of that truly admirable physician. The characteristic symptoms were hiccough, hissing respiration, and irregularity of the heart's action, coming on at intervals concurrently with choreic convulsions of the limbs.

Although I withhold assent to the universal dominion of embolism over chorea, I am of opinion that it is mainly through the altered character of the blood that the nerve-centres are excited to the manifestation of chorea. The opinion of Sydenham may seem vague, but it probably contains, if it does not very rigorously expound, the truth. "This disorder," he says, "appears to me to proceed from some humours thrown upon the nerves, which, by their irritation, excite preternatural motions."

This blood change may be acute, as in chorea, quickly fol-

lowing upon fright or other psychical shock. It may be of slow or gradual origin from bad food, malaria, the action of zymotic poisons, as scarlatina—a not uncommon cause of chorea—disorder in the menstrual function, or pregnancy.

But blood change can only be regarded as an exciting, a provoking cause. Alone it would not produce chorea; otherwise the disease would be far more frequent. We must, therefore, conclude that there is an antecedent condition, a predisposing cause, laying dormant until provocation is given. What this antecedent condition is can be only matter for speculation. In some cases it is probably of hereditary origin. Certain it is that in some children chorea will break out under provocations that produce no such effect in others. This is seen remarkably exemplified in the chorea of pregnant women. In a large proportion of cases it is expressly stated that the subjects had had chorea in childhood. As strength grew the chorea had disappeared, but when the blood was again reduced under pregnancy, the dormant proclivity to chorea was again manifest; and this not once only, but sometimes in a second, a third, or a fourth pregnancy.

In some cases hæmorrhage, as in labour, or the anæmia induced by lactation, has brought it forth; and it deserves to be recalled that the same causes—hæmorrhage and lactation—will sometimes induce epilepsy.

As to the relations of chorea and pregnancy, it appears that chorea in this complication is attended with more danger, both to reason and to life, than under other circumstances.

In some cases, under restorative treatment, the chorea has subsided during pregnancy, and the patients have been delivered at term.

In some cases premature labour has occurred spontaneously during the continuance of the chorea. In many cases this event has been quickly followed by the cure of the chorea; in some it seems to have rescued the patient from death; in some the abortion has been quickly followed by death.

In what way does chorea lead to premature labour?

Not necessarily by first producing the death of the child, for the child is frequently born alive.

In its tendency to provoke labour, chorea resembles eclampsia, and I think it probable that both act in a similar manner. Convulsions, choreic or epileptiform, commonly entail three effects. They divert from its proper distribution and exhaust the vis nervosa; thus producing a sudden or protracted shock. By the disturbance of the respiratory function they cause an acute alteration in the blood, marked by rapid accumulation of carbonic acid. These first two acute effects entail a more persistent evil: impairment of nutrition, especially of the nervous centres, and impairment of the great excreting organs, the liver and the kidneys. This last condition is frequently only an aggravation of disorders pre-existing and leading up to the convulsions.

Any one of these three factors may lead to the premature advent of labour.

The independent influences of a sudden derivation of nervous power in causing labour seems to me sufficiently established; but it is difficult to determine the special influence of convulsions, since these almost always entail an obstruction to respiration and the accumulation of carbonic acid in the blood. The influence of this latter condition is, I believe, very great. Marshall Hall, Brown-Séquard, and Scanzoni have demonstrated the action of blood loaded with carbonic acid in causing contraction of involuntary muscle. Women suffering from acute or chronic asphyxia due to heart or lung disease; women seized with fever, as variola, typhoid, or relapsing fever; women moribund from any cause, are extremely liable to abort. It is commonly during or soon after a paroxysm that the subjects of eclampsia or chorea are taken in labour; that is, at the moment when the rapid accumulation of carbonic acid is at its acme.

Under the third condition, that of mal-nutrition and the circulation of impure blood in a chronic form, abortion may still occur. But there is a greater probability of the child being born dead, the death of the child being the proximate cause of the abortion.

The treatment.—What are the conclusions to be drawn respecting this the ultimate object of our inquiry?

I have already submitted that, since it appears in the highest degree probable that the chorea is the cause of the consecutive mental disorders, the great indication is to cure the chorea. How is this to be accomplished? I will not attempt to give any comprehensive review of the many remedies that have been found more or less useful in the treatment of chorea in children. I will simply advert to one on account of its interesting bearing on the pathology of the disease. Dr. Blache speaks favorably of the influence of frictions and methodical gymnastics. The substitution of regular and ordinated muscular movements for the disorderly movements of chorea is full of promise. It would recall the nervous force from its morbid waste to a healthy employment; this healthy employment, instead of stunning or exhausting the brain, would act as a natural stimulus to healthy nutrition, and thus tend to avert the mental disorders which the shocks produced by the choreic convulsions are so likely to entail.

But my more immediate purpose is to determine the mode of dealing with chorea complicating pregnancy. The first question that arises is—Shall we break the complication by eliminating that element, the pregnancy, which is the more easily and promptly disposed of? In deciding upon this point we must be governed by the severity of the chorea and the relative strength of the patient. If the chorea is not severe, and if the brain preserves its integrity, it will be wise, I think, to defer the induction of labour. A large proportion of cases get well during and without interruption of pregnancy.

Amongst the remedies to be tried are iron, zinc, strychnia (Trousseau), bromide of potassium.

Dr. Radcliffe recommends hypophosphite of soda and cod-liver oil. Fifteen years ago I suggested the diphosphate of zinc for the relief of epilepsy and other diseases inducing waste of nerve-tissue. I have used it largely and still think well of its action. The apparent success of bromide of

potassium in Case 38 makes it incumbent to try this remedy.

But we must be careful not to postpone too long the induction of labour. The influence of pregnancy in keeping up the chorea is too manifest in some of the severest cases to be overlooked. Especially must we be on the alert if any signs threaten mental impairment or other cerebral disorder; if the patient's strength be giving way, or even if the choreic convulsions continue with unabated violence.

If these conditions exist, it will, I think, be the safer course to induce labour betimes, for if we wait until they have made considerable progress, the induction of labour may fail to save the patient's life. It is remarkable how quickly the grave symptoms may come on, leaving little time for deliberation. (See Dr. Ogle's case, No. 15, "Fatal cases.")

The mode of proceeding should be that which involves the least possible irritation, which leaves as much as possible to nature. That which answers best to these conditions is the placing an elastic bougie in the uterus.

I. *Table of*

No.	Authority.	Age.	No. of pregnancy and stage when chorea appeared.	Presumed cause.	Course of disease.
1	Riedlin	—	—	Chorea previously.	—
2	Frank	—	First; early ...	Ditto.	—
3	Dubois	19	First; 7th m.	Hysterical.	Shortly cured.
4	Hufeland ...	19	7th m.	—	Terminated by an attack of acute rheumatism.
5	Hufeland ...	—	—	—	Connected with febrile rheumatism.
6	Furnes	—	3rd m.	—	Cured in nineteen days.
7	Mayo	—	4th m.	A disgusting object thrown at her.	Two months in extreme nervous illness.
8	Turner	23	First? late ...	—	Very violent; limited; left arm and leg got well quickly.
9	Richelot... ...	20	First; 3rd m.	Chorea previously and chlorosis.	Cured in three and a half months.
10	Ingleby	—	First; 6th or 7th m.	Chorea in childhood.	Cured before end of pregnancy.
11	Ingleby	—	First; 4th m.	Was pale, delicate, vomiting; constipation almost immediately on conception.	Continued until after delivery.
12	Lever	—	First; 3rd m.	—	Chorea ceased on delivery.
13	Lever. (Same patient as No. 12.)	—	Second; 3rd m.	Chorea in first pregnancy.	Ceased on abortion at five months.
14	Lever	—	First; 3rd m.	Poverty and mental distress.	Incoherent talking; mental disorder; chorea ceased before labour.
15	Lever	Young	Second; 2nd m.	—	Chorea throughout pregnancy.
16	Lever	20	Third; 4th m.	Chorea in childhood.	Memory impaired; chorea until
17	Scanzoni... ...	24	First; 4th m.	—	Chorea until ninth month.
18	Mosler	24	Second; 3rd m.	Chorea before.	Chorea until

n-Fatal Cases.

ature delivery, ntaneous or artificial.	Child alive or dead.	Result to mother.	Treatment.	Pathological observations.
ontaneous.	—	Recovered.	—	
ontaneous th month.	—	Ditto.	—	
egnancy not rupted.	—	Ditto.	—	
—	—	Ditto.	—	
—	—	Ditto.	—	
—	—	Ditto.	—	
egnancy not rupted.	Child alive at term.	Ditto.	—	Child had chorea from birth, and grew up nearly idiotic.
tto.	—	Ditto.	Sesquioxide of iron.	
tto.	—	Ditto.	—	In a second pregnancy no relapse.
tto.	—	Ditto.	Carbonate of iron and aperients.	
tto.	—	Ditto.	Purgatives useful.	The chorea persistent for a time after delivery.
tto.	Alive.	Ditto.	—	Memory weakened; idiocy threatened; recovered on delivery.
used at fifth th by fright, h also caused orrhage.	—	Ditto.	—	
abour at .	Alive.	Ditto.	Sulphate of zinc.	No albumen in urine.
tto.	Ditto.	Ditto.	Sulph. zinc. purgatives.	No chorea in first pregnancy. No albumen in urine. Sp. gr. 1031.
elivery at .	Ditto.	Ditto.	—	No chorea in first pregnancy. When three months in second pregnancy had a fright and miscarried; chorea ensued.
ontaneous premature.	—	—	—	Chorea disappeared on removal of afterbirth.
elivery at .	—	Recovered.	—	Chorea at nineteen, ceasing on appearance of menstruation.

No.	Authority.	Age.	No. of pregnancy and stage when chorea appeared.	Presumed cause.	Course of disease.
19	Helfft	20	First; 1st m.	Marriage; fright; chorea in childhood; fright.	Chorea until
20	Helfft	23	Second; 3rd m.	—	Chorea until
21	Ungen	18	First; 5th m.	—	Chorea ceased before
22	Iland	23	First; 6th m.	An accident.	Chorea ceased before
23	Bezold	19	First; 5th m.	—	Chorea ceased before
24	Romberg ...	20	First, beginning of.	Fell into water.	Chorea continued
25	Romberg ...	23	Second; 2nd m.	—	Chorea until
26	Romberg ...	18	First, early in.	Chorea before puberty.	Chorea disappeared in middle of pregnancy.
27	T. K. Chambers	23	First;	Acute rheumatism; cardiac complication.	Chorea continued until
28	Mr. Pye-Smith	23	Second; late.	Fright.	—
29	Trousseau ...	20	—	—	Cured in twenty-seven days.
30	Woodman ...	—	First; 2nd m.	Fright.	Recovered before
31	Woodman ...	18	First; 4th m.	Chorea at seven years.	Cured before
32	Barnes	20	Third; 5th m.	Chorea in second pregnancy; protracted suckling; anæmia.	Chorea issued in mania.
33	Levick	35	Fourth; 4th m.	Great nervous exhaustion in third pregnancy.	Chorea continued until.
34	Levick	17	First; 3rd m.	Always been nervous; fright.	Chorea until
35	Sée	20	First; 9th m.	Chorea at twelve	Chorea until
36	Sée	32	—	Chorea at fifteen	—
37A	Lawson Tait ...	22	First; 4th m.	Rheumatism and chorea at sixteen.	Ceased the moment of
37B	Lawson Tait ...	—	Second; earlier	—	Same history as in first pregnancy.
37C	Lawson Tait ...	—	Third; early. (See Fatal Cases, No. 10.)	—	Cure ensued on

ature delivery, ontaneous or artificial.	Child alive or dead.	Result to mother.	Treatment.	Pathological observations.
bortion at months.	—	Recovered.	—	No chorea in first pregnancy.
itto.	—	Ditto.	—	
itto.	—	Ditto.	—	
itto.	—	Ditto.	Sulph. zinc.	
itto.	—	Ditto.	—	
pontaneous ixth month.	—	Ditto.	—	Chorea lasted six weeks after premature labour.
elivery at n.	—	Ditto.	—	
itto.	—	Ditto.	Zinc.	Chorea recurred in second pregnancy, not in third.
itto.	—	—	—	Cured on delivery at term.
itto.	—	Recovered.	Zinc & steel purgatives.	
—	—	Ditto.	Nux vomica; morphia.	Mental disturbance.
pontaneous ur in eighth nth.	Alive.	Ditto.	—	
Delivery at m.	Ditto.	Ditto.	—	No albumen, some sugar in urine. Flooding attended labour, and some twitches of chorea appeared.
Artificial at enth month.	Ditto. Reared.	Persistent mania.	—	Chorea at seven years; lasted until menstruation set in at thirteen years. Albumen in urine copious for a time.
Delivery at m.	Alive.	Recovered.	Hoffman's anodyne.	Nervous disorder, almost amounting to puerperal mania, followed.
Spontaneous mature deli- y.	Dead.	Ditto.	Opium, purging, iron.	
Labour.	—	—	—	Chorea suspended during labour; recurred for four or five days afterwards.
—	—	Recovered.	—	General chorea came on a month after regular labour; it lasted three weeks.
Delivery at m.	Alive.	Ditto.	—	
—	—	—	—	
Abortion in rd month.	—	Recovered.	—	

No.	Authority.	Age.	No. of pregnancy and stage when chorea appeared.	Presumed cause.	Course of disease.
38	Gubler, Dumon	22	Second; 5th m.	Chorea in childhood and in first pregnancy.	Violent.
39	Woodman ...	20	First; 7th m.	Fright.	Continued

II. *Table of*

1	Ingleby	—	First.	Pregnancy.	—
2	Ingleby	—	First; 3rd m.	Pregnancy concealed?	—
3	Ingleby	—	—	—	—
4	Ingleby	—	—	—	Severe; protracted.
5	Ingleby	—	Last month.	—	Died day after labour.
6	Tuckwell ...	20	First? early.	Cardiac disease?	Died at four months.
7	Robert Lee and Barnes.	Young	Second; 6th m.	—	Died soon after.
8	Hine	21	Second; 8th m.	Chorea at thirteen; emotion.	Died on day after; ill fifteen days only.
9	Trousseau ...	24	Suckling, 5 m.	A quarrel.	—
10	Lawson Tait ...	28?	Fourth; 1st m.	Rheumatic fever in childhood; chorea at sixteen.	At three months and a half; chorea returned after abortion; died on third day.
11	Pritchard ...	19	—	Prostitution.	Died soon after
12	Levick	17	First; 5th m.	Seduction; concealment of pregnancy.	Died
13	Ogle and Day	Young	3rd m.	—	Died
14	Ogle and Boyd	23	Second; 6th m.	—	Died day after.
15	Ogle	17	First; 1st m.	Vomited a lumbricus.	Mania; died
16	Louis and Aran	20	Second; 5th m.	Scrofulous; fright.	Mania; died.
17	Woodman ...	18	First; 8th m.	Scarlatina; systolic bruit.	Violent; became eclamptic.

nature delivery, ontaneous or artificial.	Child alive or dead.	Result to mother.	Treatment.	Pathological observations.
elivery at n.	—	Recovered.	—	Recovered in eight days under bromide of potassium.
wo months r delivery.	—	Ditto.	—	

rtal Cases.

—	—	Died.	—	Died immediately after admission into infirmary.
—	—	Ditto.	—	An ovum of third or fourth month found in utero.
—	—	—	—	Ulcerations found in intestines.
—	—	—	—	Great turgidity of brain.
abour spon- eous at term.	Dead.	Died.	Bleeding; opium.	Softening of septum lucidum and corpus callosum.
Vithout being vered.	—	—	—	Shining vegetations on mitral and aortic valves.
pontaneous nature la- r.	—	—	—	Was maniacal; brain and spinal cord considered healthy; vegeta- tion on mitral valves.
pontaneous nature.	Alive.	—	—	Softening of spinal cord.
—	—	—	—	Polypoid concretions on mitral valves.
bortion in- ed.	—	—	Abortion in- duced; chlo- roform.	Sugar in urine; clot of blood in velum interpositum; heart healthy.
bortion.	—	—	—	General congestion of cerebral mass.
Undelivered.	—	—	—	A six months' fœtus in utero; brain much congested; bead-like deposit in aortic valves.
Ditto.	—	—	—	Inflammation of membranes of spinal cord.
pontaneous nature.	Dead.	—	—	Spinal cord softened.
Undelivered.	—	—	—	Fœtus of four months in utero; softening of spinal cord.
Spontaneous nature deli- y.	Dead.	—	Zinc, leeches, cold affusions, opium.	Brain punctated; spinal cord healthy.
Delivery at m.	Ditto.	Died in labour.	—	Urine albuminous.

Dr. Ogle said the author of the paper put forward the speculation that the chorea at first was due to functional irritation of the brain, and that the softening and decided lesions found in some fatal cases were the result of the chorea, the consequence of altered nutrition caused by the repeated shocks and waste of nerve-force attending the chorea. It was remarkable, he observed, that the serious mental disorders, amounting sometimes to mania, were secondary and progressive. The chorea came first, the brain symptoms followed. And the way to arrest or cure the brain-disease was to cure the chorea.

Dr. Hughlings Jackson thanked Dr. Barnes for his admirable paper, and not least for the able and liberal criticism on the views he (Dr. Jackson) had put forward, and which he then and subsequently, in reply to several speakers, endeavoured to defend. There were two chief points—(1) The position of the morbid changes allowing the choreal movements; and (2) the nature of those changes. He would speak of the simplest cases, viz., those of hemichorea. Choreal movements were, as Todd frequently pointed out in his lectures, often unilateral, and when bilateral, one side suffered more than the other. The muscular region most affected in hemichorea was the one which was palsied when part of the corpus striatum was *destroyed*, as, for instance, by a clot. Sometimes the movements were replaced by decided hemiplegia like that which such destruction of the highest motor centre caused. As in hemiplegia from embolism, the right side was the one more often affected, the leg suffered more than the arm, and there was usually greater defect of speech with right than with left hemichorea. These clinical facts pointed, Dr. Hughlings Jackson believed, to the region of the corpus striatum as the locality at fault in hemichorea. He would not deny that other regions of the nervous system might be diseased by embolism at the same time. He supposed the accompanying mental symptoms to be due to similar disease of parts of the cerebrum distant from the corpus striatum, and spoke metaphorically of puerperal mania as "chorea of the mind." Here he adverted to the importance of comparing and contrasting cases of hemichorea, hemispasm, and hemiplegia, and in this connexion adverted to the great value of Dr. Broadbent's hypothesis on unilateral and bilateral movements. This hypothesis accounts for the discrepancy that in hemichorea and hemispasm the trunk muscles are involved, whereas in hemiplegia they escape. The speaker did not think the spinal cord could be to blame for hemichorea, as the face was never affected in any kind of spinal disease. Alluding to the sort of movements, he remarked that they were not mere repetitions of spasms and cramps, but incoherent successions of different movements of considerable complexity. He thought it was reasonable to suppose that the nervous arrangements for highly developed physical (or rudimentary psychical)

movements of the limbs lay near the corpora striata as—on the left side of the brain at least—did those for the movements of speech. Next as to the nature of the local changes. It was admitted by most physicians that there was frequently, at least, a condition for embolism in chorea. To speak fully on this part of the subject would, he said, be to re-state the observations and views of Kirkes and others, and the opinions Dr. Barnes had quoted from his (Dr. Jackson's) remarks in the 'Lancet,' &c. The speaker adverted to an argument often adduced against embolism being the cause of chorea that the patients frequently get well quickly. In the first place he had never supposed that in any case of chorea the main trunk, or any large branch of the middle cerebral artery, was blocked. Yet recovery did follow even *hemiplegia*, the supposed result of embolism. Such cases, however, rarely admitted of post-mortem verification. He could advance the stronger instance that recovery from hemiplegia occurred when part of the corpus striatum was actually destroyed as by clot. Much more, then, might patients be expected to recover from the slighter lesion which plugging of the smaller branches of the middle cerebral artery would cause. Whatever the particular nature of the pathological change might be, its general nature was clear. It must be a slight one. Nerve-tissue could not be *destroyed*, for the symptoms which destruction of parts of a motor centre produce must be those of *loss* of function—palsy—not disorder of function—"activity" of movements. It was neither healthy nor destroyed, but unstable. This instability, although frequently the result of anæmia from blocking, might doubtless be induced in other ways, and the speaker instanced the choreiform movements which sometimes occur during recovery from epileptic hemiplegia, the secondary result of coarse disease of a cerebral hemisphere. Nor did he deny that nerve-tissue might be unstable in any part of the nervous system, nor that any muscular groups might move irregularly, nor that any blood-vessels might be blocked. What he wished to uphold was that instability of nerve-tissue in the region of the corpus striatum only produced those incoherent successions of different movements of considerable complexity which constitute hemichorea. With regard to fright, the speaker said his experience confirmed the view which the author and others held as to the frequency with which chorea was preceded by fright. The phenomena of fright were those of disorder of circulation, *e.g.* palpitation and pallor. The perceptible bodily condition induced was a *general* arterial change. A change throughout the body could not be the sole cause of one-sided chorea, at all events. The theory of embolism implied some local enfeeblement of the motor centre previous to such general disturbance. The fact that chorea occurred chiefly in children, and that infants and adults mostly escaped, was a difficulty to all, and did

not apply to the embolic theory in particular. Since the irregular movements were chiefly of muscles used voluntarily, and as the movements of these muscles required education, Dr. Hughlings Jackson said he had some time ago put forward the hypothesis that the limitations to the period of liability were due to the imperfect education or incomplete development of the part of the nervous system of children, which was changed by the morbid process. But the exceptional cases in infants and adults, and even sometimes in old people. were not explicable on this hypothesis. The speaker admitted that there were many difficulties in his way, and that he was not prepared to answer the whole of the objections the author had brought forward.

Dr. Ogle said the author of the paper put forward the speculation that the chorea at first was due to functional irritation of the brain, and that the softening and decided lesions found in some fatal cases were the result of the chorea, the consequence of altered nutrition caused by the repeated shocks and waste of nerve-force attending the chorea. It was remarkable, he observed, that the serious mental disorders, amounting sometimes to mania, were secondary and progressive. The chorea came first, the brain symptoms followed. And the way to arrest or cure the brain disease was to cure the chorea.

Dr. Levy rose to inquire at what period of pregnancy the chorea most usually occurred in Dr. Barnes's cases? What was the latest age in which Dr. Barnes had observed chorea associated with pregnancy? whether the choreic movements generally ceased during the night time, or during sleep? whether continued rest improved such cases? whether, in Dr. Barnes's practice, the patients so affected were chiefly primipara or multipara? Dr. Levy had now a case under his observation of a woman aged forty-seven, who was then for the first time seized with chorea. Her heart was not affected, nor was there any history of rheumatism. This instance was not connected with pregnancy, as it was thirteen years since her last confinement. She was no longer menstruating. M. Roget had recorded a case where a woman aged sixty was first attacked with chorea.

Dr. Brunton said that he did not agree with the view that chorea was a disease arising from primary affection of the corpora striata produced by minute emboli; he took Dr. Barnes's view, that this affection of the corpora striata was a result, not a cause of chorea. He looked upon chorea as more of a reflex disorder, arising from eccentric irritation of the brain, analogous to the convulsive affections so often met with in children, caused by dentition, disorders of the bowels, the onset of irruptive fevers, &c.; and in pregnant women when affected with convulsions from uterine irritation and the like. In cases he had treated he had found that the best plan was to pay great attention to the state of the digestive organs, and administer full doses of bromide of

potassium with tincture of belladonna. In a case of chorea he had lately treated he had found this plan of treatment answer most admirably.

Dr. Gervis could hardly accept embolism occurring in certain cerebral vessels as the invariable cause of chorea, although it might well be one intercranial, though still eccentric, exciting cause of the disease. There must, he thought, be some antecedent predisposition in the patient, and he would suggest that this might be found in some condition of the blood. Given this predisposition, then, the occurrence of slight embolism in some of the cerebral arteries might be the exciting cause, determining the occurrence of the chorea in certain cases, pregnancy in others, and so on.

Dr. Fitzpatrick said that though he did not pretend to an intimate acquaintance with the subject of this paper, yet he could not forbear making a few observations with respect to the peculiar views which they had heard so ably advocated by Dr. Hughlings Jackson. He thought that every one who had seen much of such nervous diseases as chorea, stammering, epilepsy, particularly in the form of *petit mal*, must have been struck by the strange affinities which they presented; and from this point of view he wished to draw the attention of the Society to the theory recently put forward by Dr. George Johnson to account for the convulsions witnessed in epilepsy. As the Fellows of the Society were well aware, Dr. Johnson, resting his conclusions on well-established facts, regarded anæmia of the brain as the cause of those convulsive movements, and the facts which he brings forward certainly tend to show an intimate and almost immediate connection between the two. He, therefore, ventured to ask why those views of Dr. G. Johnson's were not in some degree applicable to the subject before them to-night, and why we should adopt what seems a far-fetched explanation while this plain and obvious one stands before us *in limine*. Moreover, all that we do know of the natural history of chorea shows it to be constantly associated with an anæmic condition of the system. Rheumatism, pregnancy, both produced depravation of the blood, and the unfavorable hygienic state in which the children of the poor, so often the subjects of chorea, lived, had incontestably the same effect. As to the cases of chorea resulting from fright which had been mentioned to-night, the subjects in them were not improbably suffering from such a predisposition to the disease that a very slight cause sufficed to determine its occurrence.

Dr. Bathurst Woodman thought that chorea was only a symptom common to varying and widely different diseases. Its place as a symptom was alongside of other disordered movements, as tricks, and hysterial convulsions, spasm, and tic, epileptiform and tetanic convulsions, &c.; but the name of chorea was, he thought,

given to three or four very dissimilar kinds of disease—one set acute, with a tendency to death; the others chronic, with a tendency to cure. One set associated with marked cerebral symptoms; the others, and commonly this was the case, could use all their mental powers, and (as shown by the gymnastic cures, &c.) could execute purposive movements of the very limbs affected. Many cases of chorea pass urine of low specific gravity.

Dr. KAUFMANN (Paris) remarked that it was easy in post-mortem examinations to recognise if a subject had had fits of epilepsy, for in epilepsy the corpora olivaria were always indurated, whereas in subjects suffering from chorea those portions of the medulla oblongata preserved their usual appearance.

After some further remarks from Dr. Wynn Williams, Mr. Heckford, and Dr. Martyn, Dr. Barnes replied, and the Society adjourned until October.

OCTOBER 7th, 1868.

John Hall Davis, M.D., President, in the Chair.

Present—41 Fellows and 7 visitors.

Dr. F. H. Daly was admitted a Fellow of the Society, and Dr. William Burup Leslie, of Dorchester, and Mr. Evan Jones, of Tymawr, Aberdare, were declared admitted.

Dr. Edward Bousfield, of Thetford, was elected a Fellow of the Society.

Dr. Gervis exhibited a double monster, in whose delivery there occurred several points of obstetric interest.

Dr. Wynn Williams exhibited a large ovarian tumour. The chief interest consisted in the great difficulty there was of determining, during life, the nature of the case. A large firm solid mass could be felt during life lying low down in the pelvis, which could also be felt per vaginam behind the uterus, and closely in contact with it, moving one with the other, apparently forming one mass, the sound passing to somewhat less than the ordinary distance. The abdomen contained a very large amount of ascitic fluid, which was drawn off by tapping on two separate occasions. After the evacuation of the fluid the tumour could be felt stretching from right to left behind the uterus, extending upwards horn-like on the left side to a greater extent than on the right. It will be seen that the symptoms were those pointing more to fibroid tumour of the

uterus than ovarian disease. Nevertheless, such was the peculiar physiognomy of the patient, so well described by Mr. Spencer Wells as belonging to ovarian disease, that from her appearance the exhibitor inclined to look upon the tumour as ovarian, and have the patient's name entered to be taken into the Samaritan Hospital for the purpose of having an exploratory incision made, and, if practicable, the mass removed. The patient, however, was taken suddenly worse, and died of peritoneal inflammation and exhaustion, having again attained to an enormous size.

It will be seen that the disease commenced in the right ovary, the broad ligament of that side forming a portion of its covering, so that, in fact, there is no recognisable separation between the tumour, broad ligament, and uterus, which is small. The tumour then passes behind the uterus to the left side, the whole, as can be seen, forming, as it were, one compact mass.

Mr. Amot had made a careful and minute examination of the specimen, and showed that it was a very compact multilocular ovarian tumour, composed of an immense conglomeration of small cysts, varying in size from that of a pea to a small Tangerine orange.

Dr. Heywood Smith exhibited a fœtus, aged between five and six months (uterine), having on the right side of the anus, but not communicating with it, a rent large enough to admit a finger, through which protruded the rectum and several loops of intestines. The mother was healthy; there was no history of syphilis. The fœtus had been dead some time before its birth; the feet presented, and the loops of intestine were found presenting with them. The mother had "flooded" at times all through her pregnancy, which had not been recognised, and during which she had worn a ring pessary. Dr. Heywood Smith submitted the question as to whether this giving way of the floor of the pelvis was due to the efforts of labour on a partially decomposed fœtus, or whether the rupture had happened before labour commenced.

The specimen was referred to Dr. Phillips, Dr. Meadows, and Dr. Heywood Smith, for dissection and report.

REPORT ON THE ABOVE SPECIMEN.

The pelvic bones and their articulations were normal.

There was a rent in the soft parts extending from the side of the coccyx on the right side along the ischio-rectal fossa to the central part of the perinæum.

From this aperture about five inches of intestine, into which a probe could be passed direct from the anus, protruded, besides several coils of small intestine.

It appears to us that this lesion was due to the progress of decomposition in utero, and not to any abnormality on the part of the fœtus; but whether it was caused only by decomposition while the fœtus was at rest in utero, or by the pressure exercised by the uterus during labour, there is not sufficient evidence to prove.

(Signed) Alfred Meadows,
John J. Phillips,
Heywood Smith.

ON IRRITABLE UTERUS.

By C. J. Tilt, M.D., M.R.C.P.,
CONSULTING-PHYSICIAN TO THE FARRINGDON GENERAL DISPENSARY, ETC.

English pathologists are fond of the word *irritable,* and you are all conversant with such terms as "irritable spine," "irritable testicle," "irritable breast, bladder, and uterus." I object to this word irritable uterus, as representing a pathological nonentity, unless it be only intended to mean the aggravated neuralgic symptoms that may be met with in the chronic stage of any kind of uterine disorder. Although

the term may have been useful as a provisional one in the dark ages of uterine pathology, it ought now to be abandoned. Consider the state of uterine pathology in 1829, when Gooch wrote! Diseases of the cervix could not be demonstrated by ocular examination, the importance of internal metritis was not suspected, little or nothing was known of ovaritis and its attendant pelvi-peritonitis; prolapsus was the only known uterine displacement, for it was only about 1836 that Velpeau began to lecture at La Charité upon uterine flexions, and on retroflexion being very often confounded with uterine engorgement. When these diseases become chronic, in highly sensitive women they cause very much the same symptoms, and Gooch described as *one disease*, the fag end of many diseases. A few years later a flood of light was thrown on uterine pathology in this country by Dr. H. Bennet, and, as far as "irritable uterus" is concerned, the result is visible in Dr. Ferguson's preface to Gooch's works; for, while agreeing with him that irritable uterus might exist without any structural lesion, Dr. Ferguson's remarks principally relate to the coexistence of the disease with various well-defined lesions, for he says, "I have known the same general train of symptoms coexist with every form of uterine ulceration, and without any of them; with every degree of uterine infiltration, and without any one of them; in a word, the local changes have been the fluctuating, the nervous affection the constant, element." He also noticed the coincidence of irritable uterus with uterine retroflexion, a fact that has lately attracted the attention of Dr. Graily Hewitt.

I give our esteemed fellow-labourer full credit for attempting to do away with the opprobrium attached to vague and indefinite phraseology; and if he had only stated that he had found certain cases, answering to Gooch's description, to be nothing more than cases of retroflexion, I could have confirmed his assertion; but as he goes further, and states in the second number of 'The Practitioner' that "*irritable uterus is nothing more or less than retroflexion of the womb of a marked form*," I

think it right to state that my experience tallies with Dr. Ferguson's, for I have not found aggravated uterine neuralgia to coincide more frequently with chronic cases of retroflexion than with other forms of chronic uterine disease. With regard to uterine retroflexion, some of my cases have derived benefit from the rectification of the malformation, but in others all suffering abated by merely persevering in the use of such local treatment as was calculated to reduce inflammation, or congestion, or neuralgia. I frequently meet three of these patients, who, after many years of great suffering and sofa-life, are now able to take an active part in the duties and pleasures of society; in all three the womb is, nevertheless, just as much retroflexed as ever it was when they suffered most. Indeed, the longer I practise the more I have become convinced that a host of women are able to fulfil the duties of life, with little or no suffering, notwithstanding a considerable amount of uterine malformation or displacement.

The worst of having to treat of an ill-defined vague complaint is that its diagnosis is equally vague and indefinite. Everybody knows that retroflexion of the womb is frequently attended by back pain and other pelvic pains, and by more or less inability for exertion, but that does not constitute irritable uterus for me and for most observers. I would not say that it does so for Dr. G. Hewitt, without his permission, but he must have met very freqnently this confessedly rare disease, for he seems to state in 'The Practitioner' that he has had fifty cases of "irritable uterus" since he has been experimenting with the American ring-pessaries, and that by their means he has been able to cure or greatly relieve every one of these fifty cases.

I cannot reconcile this statement with the well recognised difficulty of curing these aggravated forms of uterine neuralgia, and with the well-known fact of their being generally made worse by surgical interference.

Patients come to me answering well-to Gooch's description of aggravated uterine neuralgia; and if I relieve them by curing chronic ovaritis or the several forms of chronic

metritis, or by correcting retroflexion, I say I have cured one or the other of these complaints, and only give the name of "irritable uterus" to a case when, having cured or nearly cured one or other of these diseases, the patient remains just as helpless as ever, suffers acutely when the womb is gently touched, and has occasionally paroxysms of severe pain, for which no other cause can be found than nerves irritated by the vicinity of morbid tissues in women of a highly excitable nervous system. For me, "irritable uterus" is nothing more or less than neuralgia of the uterine nerves, kept up by the morbid condition of the uterine tissues that has almost always lasted for many years.

I thus confirm the views entertained by one of our most eminent practitioners, for, however imperfect were the pathological data of his epoch, Gooch rightly appreciated the phenomena he described. He knew the symptoms of "irritable uterus" to depend on neuralgia, on account of their paroxysmal nature, in women of highly sensitive nervous systems, and he compared the pains to those of dysmenorrhœa, and to those of hysterical joints. We all know that in very nervous women a small amount of local mischief will often cause severe, long-continued, and most eccentric neuralgia, and that this will often subsist for some time after the surrounding tissues seem to have been restored to their healthy structure. Neuralgia has so many degrees and varieties according to the patient's constitution, and to the comparatively healthy or diseased condition of the tissues that surround the painful nerve, and I submit that there is not more difference between ordinary toothache and the toothache of a diseased fang, between ordinary headache and the headache of a brain whose structure has been injured by long-continued illness, than between the ordinary pains of uterine disease and the aggravated pains and symptoms that so forcibly struck Gooch. The treatment for such cases is the treatment for neuralgia; not only sedatives and tonics, but change of air, of circumstances, and peace of mind that is beyond our power to give, and, at the same time, strenuous efforts should be made to cure

whatever remains of uterine mischief may still be left, by cooling vaginal injections, by cold and medicated hip-baths, and by the local exhibition of sedatives.

In conclusion, I will observe that the assertion of irritable uterus being the symptom of retroflexion is only part of a larger question that still divides obstetric physicians into two camps. If Dr. G. Hewitt entertains the view that I have discussed, it is because he agrees with Sir J. Simpson, that the malformation of the womb is the actual cause of the symptoms that often attend it, and that it suffices to restore the womb to a right shape and position to do away with all attendant pain and congestion.

While many amongst us attach too much importance to mechanical measures, and, with so many better titles to our respect, pride themselves on slight modifications of well-known instruments, and dispute the priority of their invention with a warmth that is not justified by their value, let us not forget that a host of the best living authorities, French, German, as well as British, consider uterine displacements to be comparatively harmless if unassociated with congestion and inflammation of some portion or of the totality of the womb. To those who chiefly depend upon mechanical appliances to remedy uterine displacements, I would say, wait at least till you have fairly tried all other means of relieving the patient's sufferings; for although it be perfectly true that, in exceptional cases, even the diseased womb will bear with impunity any amount of surgical manipulation, in the majority of women, if the womb be diseased as well as distorted, surgical interference will give rise to more or less disastrous consequences.

ON FLEXIONS OF THE UTERUS.

By Alfred Meadows, M.D. Lond.,

PHYSICIAN TO THE HOSPITAL FOR WOMEN, AND TO THE GENERAL LYING-IN-HOSPITAL.

Regarding the Obstetrical Society of London as the proper arena for the discussion of disputed points in the pathology or treatment of the diseases of women, I have thought it well to bring under the notice of the Fellows one or two questions of great practical importance on the subject of uterine flexions, about which, as it appears from recent writings, much difference of opinion is entertained: and as it is evident that opinions so diverse cannot all be true, while the subject matter in dispute has a most important bearing upon the management of cases of uterine displacement, it seems to me of great moment to elicit the views of the Fellows of this Society.

It will probably be in the recollection of most of my hearers that a few years ago the subject of uterine displacement was discussed in the French Academy of Medicine with great warmth and ability; and although the opinions expressed on that occasion were very far from unanimous, I believe I am right in stating that by far the greatest weight of testimony was in favour of the view which I myself am disposed strongly to advocate, and against that which has recently been very prominently put forth by highly competent observers in this country.

In a scientific Society, such as that I am addressing, it is unnecessary for me to disclaim all idea of seeking a party or personal triumph; I am anxious only to obtain the expressed opinions of practical men on a purely practical question; and though I shall freely and frankly state the opinions at which I have arrived after many years of careful and unprejudiced observation, I am nevertheless perfectly willing to reconsider my position in regard to this ques-

tion, if argument or experience can be brought forward of sufficient weight to shake the foundations of my present belief. In return, I would ask of those who differ from me the same unbiassed consideration of the views advanced in this paper—the more so because it cannot be doubted that the issue is a most important one in a therapeutical point of view, and an error in this respect may lead, as in my own experience I know it has led, to very grave consequences.

The question, then, which I wish to consider is, whether in the case of uterine flexion the congestion and inflammation, with the attendant pain and local distress which are so constantly present, are a cause or a consequence of that flexion. The practical bearing of this question is apparent when we remember that, if the former be true, as I am disposed to maintain, viz. that the uterine engorgement, with its resulting pain and tenderness, is a direct and principal cause of flexion of the uterus, then obviously the preliminary treatment will aim at a restoration of the uterus to its normal condition, prior to any attempt being made for its reposition. While, on the other hand, if, as is constantly stated by some very able observers, the displacement of the uterus leads to all the attendant evils, then it is clear that our first care should be directed to secure a return of the uterus to its proper position, in the belief that with this return, and as a consequence of it, all the other local symptoms will speedily disappear.

It may be well that I should first give the latter view of the case as it is described by its advocates. Dr. Graily Hewitt, in a paper which he recently published in 'The Practitioner' on the treatment of the so-called "irritable uterus," asks, "Why does retroflexion of the uterus give rise to such excessive irritability of the organ?" And the answer which he gives is as follows:—"The flexion produces, mechanically, engorgement of the uterus, interferes with the circulation within it, and compresses the nerves which course through its tissues. And the stretching and dragging of the peritoneum involved cannot be unimportant.

It generally happens in these cases that a cursory digital examination gives an incorrect idea as to the locality of the tenderness; for when the examination is done gently it will, as a rule, be found that the cervix is hardly, if at all, sensitive, while the slightest touch on the fundus of the uterus, which is now low down and displaced, and can be felt behind the vagina, gives the acutest pain to the patient, thus showing that the sensitiveness is localised."

Further on, in reference to the structural lesions which so constantly exist in connection with uterine flexions, the author expresses his conviction that "in a very large number of cases these structural changes are themselves the result of accidental alterations in the form of the uterus. . . . The organ becomes congested, painful, tender; motion aggravates the displacement, the pain increases, and the uterus gradually hardens, preserving the vicious shape it has thus accidentally acquired."

Lastly, in support of the opinion thus expressed, Dr. Hewitt states as a fact that he has "treated many such cases on the principle alone of reducing the flexion," and he adds that he has "found such treatment almost universally successful in removing the symptoms." "The most satisfactory method," he says, "consists in the application of pressure behind the cervix uteri, maintaining the cul-de-sac of the vagina behind the cervix uteri in a high position in the pelvis."

Another authority, Dr. H. G. Wright, in his recently published work on 'Uterine Disorders,' appears to maintain the same or similar views; for, in reference to the opinion entertained by the majority of French obstetricians, to the effect "that all the sufferings which attend and indicate uterine displacement are to be explained by congestion or inflammation of the womb," he says, "My own experience, public and private, derived from close observation of a very large number of cases, compels me to dissent altogether from this view." And in his plan of treatment for these cases he places the reposition of the organ in the first rank, and after that "the remedying of the conditions which

originally led to, or tend to reproduce, deviation of position."

Dr. Wright, however, seems quite alive to the fact that these uterine flexions very seldom occur except as a sequence to some antecedent abnormal condition; and the conditions which he quotes as likely to lead to flexion of the uterus, are, for the most part, characterised by just those states which he is anxious to repudiate as having any share in the patient's sufferings. Not only so, but he adds, and this seems rather to contradict what I have previously quoted from him, that "the method of its treatment, and the assurance of permanent reposition, depends upon a prior recognition of the original conditions, which allowed the deviation of place."

What in his mind may be the object or utility of this "prior recognition" I fail to perceive, for that "the original conditions" are not to receive any early attention in regard to treatment is clear from the further remark, that "Whichever be the kind of uterine displacement, however extreme its extent, and whatever the proposed plan of treatment, the first indication is to produce restoration of the natural position, if this be possible;" and the only impossible cases of reposition suggested by the author are, those where the displaced organ is bound down in its unnatural position by adhesions.

I will only now quote from one other recent writer, though he is not an obstetric authority; but as his position and undoubted ability are likely to give weight to anything that he writes, while what he has said on this subject is, in my judgment, entirely erroneous, I feel constrained to notice it. Dr. Anstie, in his paper, read at the last meeting of the British Medical Association, "On some forms of Visceral Neuralgia," remarks:—"There is, however, one kind of peripheral irritation locally connected with the uterus itself, which is probably one of the most frequent of all exciting causes of uterine and ovarian neuralgia—namely, displacements and flexions of the womb." The author subsequently gives in his adhesion to the opinion lately propounded by

Dr. Graily Hewitt, to the effect, "That the great majority, if not all, of the cases which Gooch grouped under the title of 'irritable uterus,' are really examples of uterine displacement or flexion. The kind of pain which attends these cases, although more or less continuous, is liable to periodical aggravations which assume all the severity of true neuralgia, and this severity is largely commensurate with the sensitiveness of the general nervous system." Here, then, it is again implied, if it be not directly stated, that the pain which is almost invariably associated with flexions of the uterus is not due to any inflammation, or congestion, or other structural lesion of the uterus, but is the result of peripheral irritation, inducing "uterine and ovarian neuralgia;" and the inference is of course obvious, viz., that to remedy this state of things it is necessary primarily to remove the source of "peripheral irritation"—in other words, to remedy the flexion, regarding that as the prime cause of the mischief.

To all of the above I am disposed to take decided exception, and if I were asked the question put by Dr. Graily Hewitt, "Why does retroflexion of the uterus give rise to such excessive irritability of the organ?" I should answer, first, by asking for a definition of the term "irritability," and if that were stated to be "engorgement of the uterus," and "compression of the nerves which course through its tissues," with "interference with the circulation within it," which is the description given by Dr. Graily Hewitt, then I should hold that the definition was faulty, and the whole pathological phenomena as applied to retroflexion, or to any uterine flexion, misinterpreted. That there is engorgement of the uterus, and consequent interference with its circulation, with, possibly, compression of the nerves, in most cases of flexion of the uterus, I am quite prepared to admit; but these conditions do not indicate "irritability" merely, they indicate something more than that, something indeed, independent of that, and something which requires very different management. They are the essential characteristics of inflammation, and that is precisely the condition which I

hold to be an almost universal accompaniment of all cases of uterine flxion—at least of all those which come under treatment as being marked by prominent symptoms. It is of the utmost importance that we should recognise this fact, for I believe it to be the surest guide to the successful treatment of these occasionally very troublesome cases.

It is perhaps incumbent upon me to prove the truth of this statement, and not to leave it as my mere *ipse dixit*. The proof, I think, is ready to hand. All authorities will, I suppose, agree in this; that pain, tenderness, increased heat and swelling, are the unfailing indications of the existence of inflammation wherever they are met with, and especially so in tissues of a fibrous character. There is no one, I am sure, who has seen many cases of uterine flexion, but will admit the constant occurrence of these symptoms, in greater or less degree. Is it then logical to apply the term "irritability" to phenomena such as these, when they exist in the uterus, and to call the same inflammation when present elsewhere? No one hesitates to regard these conditions as evidence of inflammation even in the uterus, when they occur without any flexion. Surely, then, the existence of the latter cannot change the nature of facts. We are bound, therefore, to admit that whenever in connection with flexion of the uterus, there is pain, tenderness, increased heat, and swelling, there we have flexion of an inflamed uterus.

Let it be conceded, however, that such inflammation does exist, we have still to determine whether this be a cause or a consequence of the uterine flexion, and upon the settlement of this question our plans of treatment must mainly depend. It is obvious, therefore, that it has a very practical bearing.

I have already quoted from recent writers the evidence which they adduce, or rather, the explanations which they offer, in support of the opinion that the 'irritability,' as they call it, the inflammation, as I call it, of the uterus, which is almost constantly present in flexions of that organ, is a *consequence* of such displacement, and I will now give

my reasons for dissenting from that opinion, and in favour of the view which I hold, viz., that the inflammation precedes the displacement, and is the principal if not the sole cause of it.

First, I believe that, in a large majority, and possibly, if carefully sought after, in all cases of uterine flexion requiring treatment, there will be found to be a history of uterine disorder, antecedent to any symptoms indicative of this form of displacement.

Secondly, That in by far the greater number of such cases of flexion as apply for treatment, the uterus is, as a matter of fact, in a condition which we recognise as inflammation—that is to say, there is pain and tenderness to the touch, increased vascularity, swelling, and, sometimes, increased heat.

Thirdly, When these local conditions are present, but without any co-existing flexion, they give rise to very much the same general symptoms.

Fourthly, That when flexion is superadded to the metritis, the additional symptoms are due to the purely mechanical effects upon the surrounding parts, and are clinically separable from the previously existing symptoms of inflammation.

Fifthly, In support of the above, and in strong corroboration of the view I take of the whole question, we occasionally meet with cases in which the uterus is even acutely flexed, without there being any definite uterine symptoms except during menstruation; and in such cases, there is a complete absence of all local inflammation.

Sixthly, That, having regard to the arrangement and distribution of the uterine blood-vessels, remembering that the structure of the uterus itself is by no means what would be called highly vascular, except in its mucous lining, and that here, as elsewhere, there is the most perfect system of anastomosis; thus offering the best safeguard against mere mechanical engorgement, and mechanical interference with the circulation; remembering all this, it would seem to be very unlikely, that the engorgement in question is a consequence of such displacement as I am dis-

cussing. On the other hand, when we consider that the erection of the organ during coitus, which is brought about by sudden injection of its blood-vessels, as the result of intense functional activity, tends directly to bring its long axis more and more towards the pelvic outlet, and so to approximate the fundus to the sacral cavity, we seem to get a glimpse, as it were, of the *modus operandi* by which chronic injection of the blood-vessels, chronic engorgement, that is, in other words, chronic metritis and so called hypertrophy, tend, sooner or later, to the production, first of retroversion, and, finally, of retroflexion. Moreover, if these structural changes are the prime factors in producing uterine flexions we should expect that the worst form of flexion, that in which there was most displacement, would be associated with the more strongly marked structural lesion. And, as a matter of fact, in my own experience, I have observed that the more congested and enlarged the uterus is, the more decided is the displacement backwards. I am speaking now of the general rule to which no doubt there are exceptions.

It will, of course, be obvious to any one how the practice of allowing the bladder to be distended, to which women are said by circumstances to be very liable, facilitates the production of this form of uterine flexion, when once that organ is in a state which predisposes to it.

Lastly, The whole clinical history of displacement of the uterus backwards points in the direction I have indicated. It is, in fact, a history which gradually, but surely, under what I may call the favouring circumstances of neglect and want of proper care, leads up to the condition which, in my humble judgment, is, in the great majority of cases, the *fons et origo mali*, namely, uterine enlargement.

In support of what I have here said I may adduce the following facts from my experience of the last three years. Of fifty-two cases of retroversion and retroflexion, forty-one occurred in married, eleven only in single women; of the forty-one married women, thirty-four were fertile, seven were sterile; of the thirty-four fertile, nineteen aborted in all fifty times

and 104 children were born to them, giving a total of 154 pregnancies, or an average of about four and a half to each. Again, of thirty-two cases of anteflexion and anteversion, twenty-nine occurred in married women, three only in single women; of the twenty-nine married women, eight were sterile and twenty-one fertile; of these latter, eight aborted thirteen times, and sixty-seven children were born, making a total of eighty pregnancies, or an average of about four to each.

Thus it appears that a very large majority of cases of uterine flexion occur in married women who have been several times pregnant; a small minority being formed in single, or barren, women. In other words, flexion of the uterus is much more apt to occur in cases where the organ has been several times enlarged by the process of gestation, and we all know that frequent pregnancies, especially among the poorer classes who cannot afford to maintain the recumbent posture for long after their delivery, lead, in a variety of ways, to chronic uterine enlargement, to sub-acute metritis, and to those various other states which are constantly associated with flexion. Yet, further, speaking from my own experience, I know, as a matter of fact, that, in a very large proportion of the cases which come for treatment, the uterus is found to be more or less enlarged in one or other direction, and, as a rule, the enlargement is considerable. There are, I admit, exceptions to this. For instance, quite recently, I was consulted by a lady, forty-two years of age, who had had three children, she had been several years separated from her husband in consequence of his having infected her with syphilis. They were, however, intending to live together again, and I was requested to examine her with the view of determining whether there was any remaining evidence of existing syphilis. I then discovered that the uterus was acutely retroflexed, but could be easily replaced. There was no enlargement, nor any particular tenderness, and though I questioned the lady very closely I could not make out that she suffered the least inconvenience, indeed, she made no complaint whatever of

any uterine symptoms. All this I attribute to the fact, that, though the uterus was thus acutely flexed, there was nothing else the matter with it. And I, of course, advised that, under the circumstances, it should be left to itself without any special treatment.

This, it appears to me, is a strong case against the view that "flexion produces, mechanically, engorgement of the uterus, interferes with the circulation within it, compresses the nerves, &c.," and I have seen several other cases precisely similar to this.

Now, if all that I have urged be true, if flexions of the uterus are, as a general rule—and there is no rule without exceptions—produced by, and not producers of, enlargement, congestion, and inflammation of the organ, the one practical lesson to be gained from this fact is, that, in the treatment of these cases, our principal and first object ought not to be the immediate reduction of the displacement, as is recommended by the authorities I have quoted, and apparently by some others; but we ought first to remedy that which is not only the cause of the flexion, but which is at the same time responsible for by far the greater part of the patient's sufferings. When this is accomplished, but not till then, we may resort to mechanical or other treatment for the proper reposition of the organ. I believe, most firmly, that where a patient is suffering much, and has a flexed uterus, there we shall find evidence of inflammatory enlargement which needs all our care; where, on the contrary, she is suffering little, and yet has the uterus flexed, there we may safely disregard it. In either case it is not the flexion which needs attention, but that which we should feel bound to treat quite irrespective of any displacement.

I would not, however, have it understood that I am opposed to all treatment for the rectification of uterine flexions. I only wish to advocate its being subordinate to that which is, I believe, of far higher importance; and I wish it the more because I have seen in my own practice, with shame and sorrow I confess it, great mischief result from following the opposite course. I have seen the inflam-

mation, which I misinterpreted as a consequence of the flexion, increase and extend, apparently as a direct result of the endeavour to rectify mechanically the malposition. I have seen this also in the practice of others, when perhaps they thought the patient cured from her not attending again as desired; the fact being, that she had the best of all reasons for not returning, because she had been made worse rather than better.

It has not been my object in this paper to enter into any detailed account of the therapeutical part of the question. I have sought rather to invite discussion on the pathological aspect of it; being assured that, if we are able correctly to interpret the morbid phenomena presented to us by this class of cases, we shall have little difficulty in arriving at a successful and therefore satisfactory mode of treatment. In expressing my own decided opinions in opposition to those of others, who are, I feel, at least fully as competent as I am to judge of this question, I trust I have not said anything which is at all wanting in courtesy, nor in any way misrepresented their views. If I have, in offering my apology, I would express my conviction that we are all aiming at the same object, all alike anxious, despite our own individual opinions or prejudices, to demonstrate anew the maxim, *magna est veritas, et prevalebit.* Further, I do not wish to assume a virtue if I have it not, and in the present instance I would not claim originality in the views here set forth; the same, or very much the same, were ably advocated, and abundantly illustrated, in the great debate on this question in the French Academy of Medicine, in 1853; while in this country I can call into court the names of Oldham, Bennet, Tilt, West, Matthews Duncan and others in support of the opinions I have advocated. At the same time I know that an equally powerful array can be brought against them, and under these circumstances it appears to me the more desirable that a Society like this should pronounce its verdict in unmistakable language, that the Profession may know in which direction the path of safety lay; for that there is danger in one path I am

well assured by sad experience, and it behoves us all carefully to weigh the only evidence which is trustworthy for determining this point, viz., that derived from clinical observation. By that and that alone I have been guided to the opinions which I now submit to the same test in the experience of others.

Dr. Henry Bennet thought that the two valuable papers read by Dr. Tilt and Dr. Meadows embraced so wide a field, touched on so many of the doctrinal points in uterine pathology on which there existed extreme difference of opinion, that the members of the society could not be expected fully to discuss them in the course of a short debate. These differences of opinion, however, might be briefly embodied in two views, which divided the profession, as it were, into two camps. One party attributed most of the varied forms of uterine suffering to displacements, whilst the other thought that these displacements were generally secondary, often unimportant in themselves, and that the uterine suffering was generally the result of chronic congestion and inflammatory condition of the uterine organs. It was well known that he himself belonged to the latter section, and his views had been too often placed before the profession for it to be necessary for him now to repeat them. He would merely state the process by which he had arrived at the opinions developed in his writings. He was profoundly convinced that the real benefit to be derived from the treatment of uterine diseases generally was sooner prospective, future than present. There were so many sources of fallacy at the time of treatment, that it was vain then to judge of the results obtained, which, however, most practitioners appeared to do. The rest from usual occupations, the attention to general health, the removal of abdominal pressure from the uterus by the recumbent position or by abdominal bandages, or the temporary removal of down pressure by pessaries, all contributed to

produce a fallacious improvement, aided by the imagination of the patient. For his own part, he looked for real results, for the test of real success, in the state of his patients six months, a year, or more after the entire cessation of treatment. He made the most scrupulous examination, firstly by the touch and then by the speculum, in the lithotomy position, in a good light, with a bivalve speculum. He was not satisfied with an examination unless so made that every part of the cervix and its cavity was as clearly seen as the palm of the hand, or with treatment unless all inflammatory disease was removed. Even then, knowing the liability of uterine inflammation to relapse under the influence of menstruation, he never told a patient she was well and *safe* the same day. On the contrary, he usually said "you *seem* well, but I must see you three months or six months hence to know whether you *are* well, the disease may return." Once treatment ended, he usually placed his patients under a good home hygienic system, including cold water uterine douches. Under this system, if the patient is really quite free from inflammatory mischief, nature unaided generally does the rest; fines down hypertrophied tissues, and thereby restores uterine hypertrophies to a natural size, as it does in the case of sprained ankle or knee. He lay in wait for these patients with the mechanical armentarium ready, after six months or a year, to apply pessaries, and other mechanical agencies. But he had seldom in his career found them necessary when these patients returned, after having been some time free from their inflammatory conditions. They then, with exceptional cases of course, cared nothing at all for the displacements and flexions which often still existed. Latterly, as he had been getting older, his young patients of former days had got older too, many had reached the change of life, and now came to him for advice. He often found them with the slight retroversion and flexions of former days, which they had returned for ten, fifteen, or twenty years, without any trouble. He would also remark that there were two causes of retroversions, anteversions and retroflexions, very

productive of these conditions, which were not sufficiently taken into account — arrested absorption of the uterine tissues after miscarriage or childbirth, and marital contact. After childbirth the uterus had to fine down in six weeks from a weight of thirty ounces or more, to that of two or one and a half. Any contusion or laceration of the cervix, any inflammatory action in any part of the uterus, arrested this process; the uterus remained at eight, six, four, three ounces, and became at once displaced from overweight, retroverted or prolapsed. The only real cure of these conditions was the cure of the inflammatory disease or lesion. Once this attained, nature resumed her rights unaided, fined down the uterus, and cured the displacement spontaneously. The other neglected cause of displacement, marital contact, was of still more frequent occurrence. If the cervix was rigid from inflammation, it was mechanically retroflexed and thrust towards the sacrum; or if the uterus responded to the leverage, the latter was thrust forward in anteversion, and the cervix backward in retroversion. What mechanical treatment could remedy permanently such a condition, in itself constantly innocuous, and most common in married women?

Dr. Tyler Smith had not found the so-called irritable uterus dependent on any special pathological condition. It was met with in various morbid states of the uterus and ovaria, but in some of the most marked cases no displacement or inflammation existed. It was often in fact a form of hysterical hyperæsthesia, or hysterical neuralgia, defying purely local treatment. In the existence of acute suffering without obvious pathological lesion, it resembles vaginismus, and excessive sensibility of the meatus urinarius, occurring in hysterical subjects. He certainly did not think that retroflexion and irritable uterus stood in the relation of cause and effect. Passing to the question of the importance of mechanical displacements of the uterus and mechanical treatment, he must dissent from much which had been said by the authors of the papers. Retroflexion sometimes existed without causing much, if any trouble or inconvenience. But

this was the exception. As a rule, the subjects of it suffered, and often most distressingly. Without underrating the importance of metritis and chronic enlargements of the uterus, he believed retroflexion generally depended on mechanical causes. There was often a history of its occurring suddenly, after some fall or strain. If he were asked to name the most frequent single cause of retroflexion he should mention laceration of the perinæum. Here, the cause of the backward descent of the uterus was obviously mechanical. He had known cases where patients, the subjects of retroflexion, had borne several children, the uterus returning after labour to the retroflexed condition. Such patients showed no signs of metritis during their pregnancies, nor could we ignore the results of treatment. If you placed a pessary in contact with an inflamed uterus, you were soon made aware of the fact, and obliged to remove it. But in the majority of cases, the relief afforded in retroflexion by a proper pessary was often most marked. Patients before unable to walk, could take exercise without pain, and in the end got well. He made these remarks because the mechanical treatment of retroflexion had seemed to be put on its trial by the papers which had been read. Had the same kind of attempt to ignore the importance of acute and chronic metritis been made, we should have been found in opposition. Dr. Bennet, to whom they all owed so much in regard to uterine pathology, had wondered that in this and other countries there should be two camps holding opposite views upon the mechanical treatment of uterine displacements. He had no such surprise, for there was in reality two sides to the question. Some of us had a tendency to undervalue the importance of mechanical lesions and mechanical modes of treatment, and others dwelt upon them too exclusively. The progress of knowledge would, he believed, bring the two parties into harmony and agreement, and both would be found to have a measure of truth.

Dr. Graily Hewitt considered that the subject now brought before the Obstetrical Society was one of the very

highest importance, and very suitable for discussion, although he believed that, after all, the matter at issue was hardly one which could be settled by discussion alone. He felt highly flattered that any views put forward by himself were thought worthy of the able criticism and prominent attention which they had received from Dr. Tilt and Dr. Meadows, the authors of the two interesting papers which had just been read. He felt also much obliged to those gentlemen for the courteous manner in which they had dealt with the subject as far as he was concerned. The paper on the 'Irritable Uterus,' which he (Dr. Graily Hewitt) had published in the "Practitioner," had, however, been misquoted in one particular by Dr. Tilt, viz., as regards the number of cases of this supposed affection which he had observed. With reference to the main fact as to the identity of cases of supposed irritable uterus, and cases of retroflexion of the uterus, the point for which he had contended in the "Practitioner," he could only repeat that the views there expressed were the result of careful clinical study, and he had nothing to retract or modify on this part of the subject. The paper of Dr. Meadows was a most able and dispassionate examination of the pathology of cases of flexion of the uterus. In that paper, however, Dr. Meadows had inferentially allowed it to be supposed that he (Dr. Hewitt) thought little of inflammation of the uterus, as connected with flexions of the organs. On the contrary, he believed that in almost all cases of flexion there was a condition of the uterus characterized by engorgement, congestion, enlargement, &c., pre-existing and predisposing thereto, and this subject he had largely developed in his work on "Diseases of Women," attaching as he did the greatest importance to these alliniations in the bulk and structure of the uterus. So far, then, he entirely agreed with Dr. Meadows. But as to the question, whether in cases of flexion the co-existing engorgement, increased bulk and tenderness constituting the "irritability" or "inflammation," as you please to call it, be the cause of the symptoms, as Dr. Meadows contends, or the reverse, he differed

from Dr. Meadows, and believed that pathologically as well as therapeutically the flexion was the prominent and remarkable feature of these cases. The tenderness of the uterus was generally limited to the displaced fundus which was usually sensitive to the slightest touch. The restoration of the organ to the proper shape was, in his mind, the first indication, and the success of this mode of treatment simply justified this view of the case. To treat the inflammation, tumefaction, &c., of the uterus without altering the shape of the organ, appeared to him as illogical as the application of cooling lotions to the arms with the view of reducing a swelling and tumefaction due to a dislocated shoulder-joint. The parallel was not complete, but would serve to illustrate his meaning. The fact that the uterus was sometimes in such a state that rectification could not at once be attempted must of course be recognized. The inflammation had to be treated undoubtedly, but in most cases, he contended, the mechanical rectification did remove or materially improve this so-called inflammation. He believed with reference to the bearing of this subject generally, that further advances in uterine pathology must be associated with a full recognition of the importance of flexions of this organ. The os and cervix uteri and their lesions were of course important, but there could be no question whatever that great and numerous errors had resulted from the adoption of a system of uterine pathology and treatment which practically ignored the disorders and displacements of the body of the uterus.

Dr. Head observed that the uterus flexed or verted as a consequence of fibroid tumour in its structure, or of ovarian disease, did not necessarily become congested or irritable, and therefore that any mechanical explanation of congestion, or of painful pressure on the nerves of the uterus in other cases of displacement was extremely doubtful. Again, at the climacteric period the symptoms generally ascribed to retroversion abated or ceased, the uterus nevertheless remaining displaced. These considerations had led him for some time to make examinations per rectum in all aggravated cases of retroversion, and he had frequently found

the left ovary low in the pelvic cavity, swollen, and extremely painful on pressure. He believed that the symptoms hitherto supposed by some to denote irritable uterus depended mainly on a morbid sensibility of the left ovary, and that this condition had been confounded with the so-called irritable uterus.

Dr. Rasch said that a great deal of the discrepancy of the opinions of different authors would disappear if the pure cases of flexion were properly diagnosed from those complicated with infiltration of the ligaments, inflammation of the ovaries, adhesions, &c. He laid great stress on the mode of examination, and described his way of exploring the pelvis, by which in most cases it was possible to diagnose the state of the surrounding parts beyond the possibility of a doubt. From a very large number of cases he had seen, he was far from falling in with the opinions of of those who believed the flexions to be harmless affections (though in a few cases he himself had seen even retro-flexions which gave rise to no inconvenience, and which he therefore left alone), the symptoms were mostly well marked and characteristic, and the relief given in properly selected cases was very striking.

Upon the motion of Dr. Routh, seconded by Dr. Wynn Williams, it was carried, that the further discussion on the papers shall be resumed at the next meeting of the Society (*vide* page 231).

NOVEMBER 4TH, 1868.

JOHN HALL DAVIS, M.D., President, in the Chair.

Present—47 Fellows and 7 visitors.

Dr. John Locking was admitted a Fellow of the Society.

The following gentlemen were elected Fellows of the Society:—Thos. Bell Hay, L.R.C.P. Ed., Edward Fletcher, M.R.C.S., of Melbourne, Victoria, and George Ranken Playfair, M.D., Agra.

Dr. GRAILY HEWITT exhibited a series of Pessaries which he had for some time employed in the treatment of uterine displacements and flexion. First, a series of oval rings, a modification of Hodge's pessary, of various sizes, for the treatment of retroflexion and prolapsus. Secondly, a series of pessaries, of various sizes, and of novel construction, for the treatment of anteversion and flexion. These are made from a ring bent into a peculiar form, and termed by the inventor "cradle" pessaries. For two years he had made use of these with very satisfactory results. Thirdly, a series of stem pessaries, also of novel construction, the stem of ebonite, an inch and a half long, supported in its place by an oval-shaped basis of gutta percha—of various sizes, according to the size of the vagina. These he had used in the more obstinate cases of anteflexion, and for dysmenorrhœa or sterility therewith associated, and also in certain cases of retroflexion. The various instruments exhibited were constructed on the principle of using the vagina as the basis of support, or *point d'appui* from which to act on the

uterus, and the author had found them most efficacious in dealing with various obstinate mechanical derangements of the uterus.

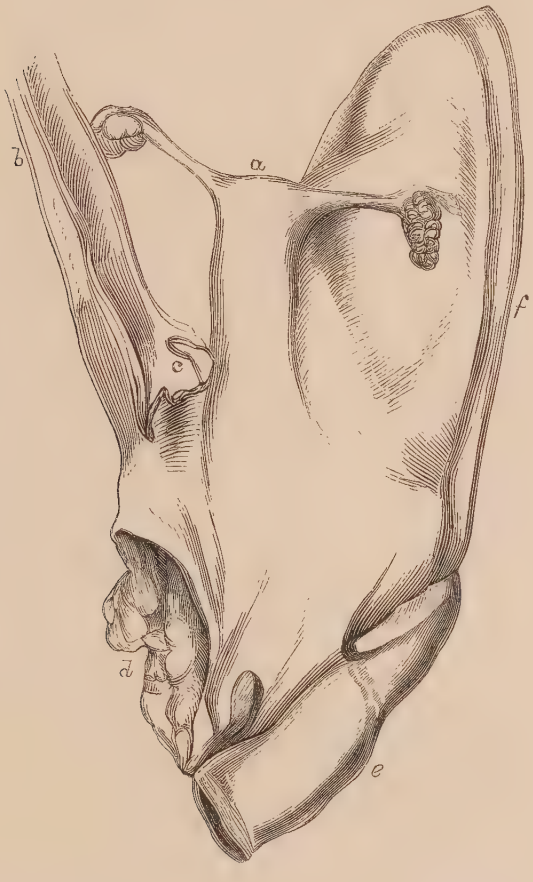
Dr. Meadows exhibited some new forms of Medicated Pessaries which he believed would be found, as they certainly had been in his hands, much more efficacious than those ordinarily used, and which were made with the cocoa butter. He had abandoned the latter, partly because he found that patients objected to the greasy mess which the butter made, and partly because, though large quantities of drugs were incorporated in them, such as two and three or more grains of belladonna, for instance, yet that often little or no effects were observed. He believed that this was due, mainly, if not entirely, to the fact, that it was no part of the function of the vagina to absorb fats, and that in all probability the ingredients in the old form of pessaries became coated over, as it were, with a protective shield of the butter, and so passed away from the vagina without being absorbed, and therefore without producing any effect. At his suggestion, Messrs. Bell and Co. had now made some pessaries in which the basis was soft soap, made into a mass, either with powdered althæa, which was an agreeable demulcent, or with starch, or with common beeswax, and containing the ingredient we wished to apply. In either of these forms the pessary would soon melt, the ingredients were easily absorbed by the vagina; in the absence of any protecting fat the strength of the pessary could, therefore, be much diminished, and very much more satisfactory results had accrued. They were both cleaner and more effective than the cocoa-butter pessary or suppository.

Mr. Heckford gave the history and exhibited the specimen of the following case:—

A child, aged ten months, was brought to the East London Hospital for Children, having some large villous-

looking growths attached apparently to the vulva. Opinion was divided as to whether they were syphilitic or cancerous.

Fig. 4.



ANTERIOR VIEW.

a. Uterus and ovaries. *b.* Abdominal wall. *c.* Section of bladder. *d.* Vagina and protruding vegetations. *e.* Rectum. *f.* Sac.

On further examination it was found that these growths extended inwards, and lined a large sac which represented an enormously enlarged and dilated vagina.

Death shortly afterwards took place, and at the post-mortem examination it was disclosed that the rectum, bladder, and urethra were normally situated.

The uterus (to which were attached healthy ovaries and

FIG. 5.

POSTERIOR VIEW.

a. Uterus and ovaries. *b*. Abdominal wall. *c*. Section of bladder. *d*. Vagina. *e*. Rectum. *f*. Section of sac with a portion of vegetation adhering.

Fallopian tubes) opened by its os uteri into the upper wall of the cyst.

The microscopic examination proved the growths to be medullary in their character.

Their first appearance could not be traced beyond, at most, four months.

There was no history of cancer ascertainable in the family.

The coexistence of malignant disease, with an evident malformation of the vagina, is quite unique.

AN INTRA-UTERINE FIBROID TUMOUR; A PART REMOVED BY THE SINGLE-WIRE ECRASEUR; THE REMAINDER STRONGLY ADHERENT, CUT INTO IN DIFFERENT DIRECTIONS, AND THROWN OFF BY DISINTEGRATION ON THE FOURTH DAY.

By J. Hall Davis, M.D., F.R.C.P.,

OBSTETRIC PHYSICIAN AND LECTURER ON MIDWIFERY AND THE DISEASES OF WOMEN AND CHILDREN AT MIDDLESEX HOSPITAL, ETC.

I am indebted for the following report of the medical history of my patient's case to Dr. Alexander Halley, who first consulted me about her condition in August, 1867.

Miss E. B—, aged 50, a maiden lady of medium stature, of bilio-nervous temperament, sallow, anæmic complexion, with small very dark veins, and ashy white skin, in tolerably fat condition: expression one of anxiety and suffering. Enjoyed fair health till November, 1862, when she fainted, and was supposed from her complexion to be then suffering from jaundice. But she had flooding at that time, and almost at every monthly period the flooding was repeated profusely, often producing syncope.

In October, 1863, she came under my (Dr. Halley's) care, arriving from Aldershot. I prescribed the tincture of the perchloride of iron, and she improved in general health. In March, 1864, she suffered from a peculiar fluttering at the heart, with an aortic bruit at the heart's base, and she was very anæmic, had intense sickness, rejecting whatever she swallowed. Oxalate of cerium prescribed by Dr. Walshe relieved this somewhat, and after taking citrate of iron she became very much better. In 1865 she continued improving, but in July, 1866, she had a return of flooding, fainted in church, and fainting returned on the slightest exertion. I had in 1864, says Dr. Halley, urged a thorough examination of the uterus, but this was not permitted, notwithstanding all my entreaties.

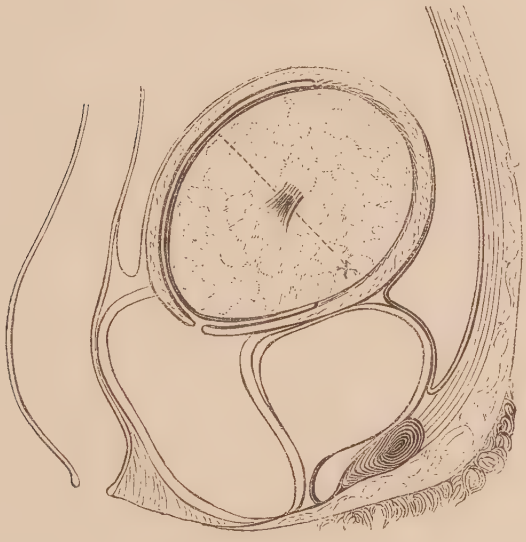
In August, 1867, she was laid up at Aldershot, and nearly died from flooding. Dr. E. J. Barker brought her up to London, as soon as she could be moved. I then examined and found a tumour, and requested Dr. Hall Davis to see her. He visited her with me on the 23rd of August, and gave it as his opinion that the case was one of a fibroid tumour within the uterus. The enlargement was pretty uniform in outline, and reached to midway between the pubes and umbilicus, extending to an equal degree on either side of the linea alba. The os uteri admitted the forefinger into contact with the tumour, which was found adherent to the uterus just above the orifice of the uterus in front; it was wholly adherent also on the right side: the uterine sound showed the tumour to be free behind, nearly up to the fundus, to a distance from the orifice of five inches.

She was not now considered in a fit state for operative interference. She was placed under a course of bromide of ammonium, with daily hip-baths of Kreuznach salt, and removed to Eastbourne. For some time Miss B— appeared to improve, but after nine months' residence at Eastbourne, which seemed to agree with her general health, and a full trial of the bromides internally and by bath, the tumour was evidently enlarging. It was therefore determined on this account, and the repeated losses of blood, to bring

her up, and submit her to operative treatment for the removal of the tumour.

On the 12th of October Dr. Davis commenced proceedings by dividing the hymen, and dilating the vagina by a Barnes' Caoutchouc Dilator, a similar but smaller one being first introduced to dilate the os uteri. These were left *in situ*, and the operation was undertaken on the following day. Dr. Davis separated the tumour from its adhesions, as far as that was possible, up to where their toughness was so

Fig. 6.



great as to prevent further detachments. Behind the tumour the points of the finger could be extended up to a broad and firm attachment of the tumour to the fundus.

The loop of Mayer and Meltzer's single wire was now carried up by the écraseur to the os uteri and up to the line (x) where the tumour had been entirely detached from its connection to the uterus. The screw of the écraseur was now turned the requisite number of times

slowly, till the portion of the growth, so cut off from the rest, was set free. The remaining portion was cut up in its interior by curved scissors carefully guided by the points of the fingers of the left hand, some sections being removed; and this portion so treated was thrown off entire, as Dr. Davis ascertained by careful intra-uterine examination, on the fourth day after the operation, which was performed under chloroform. The piece amputated by the wire presented all the characters of fibroid tumours, and weighed $6\frac{1}{2}$ ounces; the small pieces removed by excision weighed 3 ounces; and the mass, which was thrown off, weighed $8\frac{1}{2}$ ounces. So that the entire tumour weighed 18 ounces. It was very full of blood, but no great amount of blood was lost during the operation.

The patient had vaginal and uterine injections of carbolic acid lotion to guard her from ill effects from the putrefactive change going on in the portion of the growth which was left to be thrown off. The patient is now quite convalescent, and will shortly return to her residence at Eastbourne.

The sketch shows the position of the tumour, and of its inseparable adhesions on the right side at x and at the fundus.

Dr. Davis at the close of his report of the above case referred to, and in connection with it, re-exhibited a similar tumour, but larger, which he had removed from within the uterus of a lady, aged 51, nine years before. He added, that he had during the autumn of this year seen his former patient at her country residence, and found that, from having at the above period been nearly sacrificed by profuse and repeated floodings from the uterus, she continued in perfect health, without the slightest uterine enlargement. See 'Obstetrical Transactions,' vol. ii.

Note.—Dr. Davis heard in January that the above patient, Miss E. B—, had recovered perfect health.

The discussion on the papers of Dr. Tilt and Dr. Meadows, adjourned from the October meeting, was then resumed.

Dr. Routh said, if he understood Dr. Tilt's paper accurately, it is not to prove that the disease called irritable uterus by Gooch was very infrequent. Now-a-days, when examinations were more frequent and more easily obtained, experience proved that abnormal complications existed in many of these cases, inflammatory or congestive displacements, &c. Still, while admitting this, it could not be doubted that the amount of complications often have no relation to the amount of pain endured: in some cases it was neuralgia which co-existed, as in other affections. Saying this, however, he could not but state that, just as in an ordinary attack of tic douloureux of the eye, there was copious flow of tears and redness, with certain injections of conjunctiva, &c., not unlike inflammation, it was possible that the uterus should be red and apparently inflamed with leucorrhœa present, and very painful; and yet this was after all only simple tic of that organ, which would disappear in a few hours, and yield to quinine. Such cases might still be cited as instances of irritable uterus.

After eulogising Dr. Meadows' paper for its succinctness and style, he said he believed the discussion was confined to the etiology of displacements, to which he should restrict his remarks.

There were three varieties. 1st. Those produced by inflammatory or other complications of surrounding parts, *i. e.* those retained by adhesions. These cases formed about 2 per cent. 2nd. The congenital, the per-centage of which could not be determined yet, because except when called in to examine a female (which would be unlikely as a rule, except for some disturbance in the pelvis), we did not find them out. 3rd. The acquired, which might be met with, either in an *active* state with inflammatory or congestive

symptoms, or in a *quiescent* state after all these had subsided.

As regarded *anteversion*, he believed this was a much more common affection than generally believed, but fortunately often quiescent. It should be remembered that the normal position of a child's uterus, and also in early puberty, was anatomically one of antiversion. This had been satisfactorily shown by Aran. A very little exaggeration of this state of things would bring on anteflexion; whereas a fat abdomen, heavy and loaded intestines, &c., might induce it, quite apart from any congestive or inflammatory disorder of the uterus itself. It was not, however, in these last cases that our attention to relieve pain, &c., was called.

But with regard to retroflexions, he believed the affection was, except in congenital cases, acquired. Even in many cases not congenital, or produced by adhesions, where we found it (which includes the second category of cases he had mentioned in his third division), when the patient was questioned, indeed almost invariably, there was a history of former uterine disease, during which period the retroflexion had occurred.

His friend and colleague, Dr. Savage, was present, and far more competent than he was to speak of the anatomical points that bore on this disease. He would, however, allude to some of these. And first he would say, given a healthy pelvis and healthy ligaments, retroflexion was impossible. How could the uterus be displaced, kept tightly fastened as it was on each side by the lateral ligaments, behind by Douglas' ligaments, and in front by the round ligaments, and supported inferiorly beside by the pelvic fascia. It was impossible to conceive this if due regard were paid to the anatomical conformation. But what did occur pathologically in such cases? Aran and Sandry had proved this incontestably. The round ligaments and the Douglas ligaments were both especially *relaxed*. The lateral less so. The points of support thus were removed superiorly and necessarily the organ was disposed to fall on one side or the

other. But more than this, the organ was *top heavy*. Inflammation or congestion of that organ gave rise to an enlargement of the fundus and body, irrespective altogether from any enlargement of the cervix. It might be argued that, if so, the cavity would be lengthened, as shown by the sound. But this was a mistake; the increased weight was due to the surrounding vessels. Reference to Dr. Savage's plates would show their number and to what a size they attained when injected; and as these were far more numerous in the body and fundus than in the cervix, which might be unaffected altogether. In long-continued cases, however, as in pregnancy, indeed, the cavity might be lengthened also —as shown by the sound also. Usually, however, things remained in this state, with perhaps only a little retroversion; when suddenly, after a long walk, or a fall or jump, the retroflexion was consummated. He did not see how it could occur otherwise. The inflamed or congested uterus, weighing down the ligaments. These giving way gradually—finally, the retroflexion induced by some sudden accident. Dr. Tyler Smith had instanced a case where retroflexion had occurred suddenly, and in which the uterus was perfectly healthy. He dissented from the explanation. The accident in this case was only an exciting cause. There had been most likely formerly, if not then, present an enlargement of the uterine organ, which had produced previous relaxation of the ligaments.

If he was right in these views, it followed clearly that until this congestion or inflammation was at least partially subdued by treatment, no permanent good could result from the preliminary use of instruments. As to the cause of this congestion or inflammation of the uterus, in addition to cold, a common cause, there were two others he should mention. One was previous pregnancies. In nearly one third these were twin pregnancies. But insufficient rest after a confinement, and getting up before the uterus was involuted, were all powerful in the induction of the disease, specially among the poor. This he should have considered treason to say in Dr. Rigby's time, his views being so strong on

early getting up. The second he would say was frequent venereal excesses. During the orgasm the uterus was congested, and a frequent repetition of this state induced permanent congestion.

Now, he had seen several cases of women from other institutions in private practice, come to him who had been treated by all sorts of Hodge pessaries, including Dr. G. Hewitt's modifications, and still uncured, and suffering intense pain from these, and who only got well till these complications had been first overcome, and then and not till then they got well. He was not so vain as to say that some of his cases had not left him also, and gone elsewhere, and been cured by others. But still, why did those who had come to him from others remain uncured? Now, he could not but feel, from past experience and close observation, that in cases where retroversion was accompanied with pain, inflammation or congestion of the organ, nothing but depletion, combined with absorptive remedies, did good, and specially the former. He might in fact allude to one case where, unfortunately, a patient under his care was leeched by a nurse, who allowed the bleeding to reach undue bounds. She was very ill, in fact in peril for a day or two, but at last got better. In her case, a retroflexion which had lasted seven years, accompanied with great distress, and remained unbenefited by all kinds of previous treatments, was completely and permanently cured. Whether the depletion was therefore by leeches, scarifications, or the hysterotome, it often proved a *necessary* preliminary measure before instruments or pessaries could be used.

There was one variety of retroversion to which he wished in conclusion to allude, where the pain in the fundus was most acute, and in which in reality there was little or no actual congestion or inflammation of the organ. Such pain was reflected from the ovary. The Society would remember that the fundus of the uterus was supplied by a branch coming from the ovary. The pain was here, in fact, precisely like that in the knee from hip-joint disease, transmitted from the ovary, and if this ovary were examined it

would often be inflamed. To treat this was to cure the disease, and reduce the case to one of simple retroflexion.

Dr. Savage said, this antagonism between two practitioners so eminent as Dr. Hewitt and Dr. Meadows plainly showed that all opinion about uterine displacements was lamentably unsettled. Dr. Meadows believed that these every day affections were caused by disease of a character forbidding until relieved the use of mechanical intervention. The former thought, as a rule, that the disease was the result of the displacement, and advocated the employment of pessaries as an initiatory proceeding. What discrepancy could be more perplexing to those inclined to look up to these distinguished authorities?

Dr. Savage thought a reconsideration of the normal relations of the female pelvic organs with the pelvis might do something towards a more creditable uniformity of opinion. Dr. Routh had alluded to three (the only three accepted) ligaments of the uterus, but there were others, and those more essential, or what will become of Dr. Hewitt's *vaginal* base of support for his pessaries?

The vagina, uterus, and appendages, with their enormous amount of vessels, and special ganglia, were enclosed in a peculiar tissue. This, *the uterine pelvic cellular tissue*, had properties eminently fibro-elastic (muscular also in many parts of it), and was an integral part of the pelvic uterine system. Imagine this latter so constituted thrust in between the rectum and bladder, and there fixing itself by attachments to every available point of the pelvic basin. Here was no exaggeration; the isolation too or independence of this uterine collocation in relation to the other pelvic organs, was exemplified in every case of pelvic abscess, particularly so in a preparation presented to the Society that evening. It showed the location of a large purulent formation, consequent on long previous disease in this tissue; the rectum, bladder, and ureters remaining intact from first to last.

The functions of the pelvic cellular tissue bearing on

the question he thought, could be correctly inferred from the following experiments on the dead body. Draw forcibly with a vulsellum on the uterine cervix. The strain will be seen to begin with the utero-sacral portion, where it divides to give passage to the rectum; then it passes on to the broad ligaments; cuts through these; the uterus comes down about an inch; in short, it is necessary to divide or detach at a multitude of points (particularly where it accompanies the uterine vessels) the pelvic cellular tissue before a notable displacement can be effected; or to the vulsellum attach a heavy weight, the body in a sitting position. The weight must be heavy and the time long before the uterus appears at the vulva. Remove the weight and the fibro-elastic property of the tissue even in the dead body causes the organ to retire. Cut through the broad ligaments, close to the womb, the organ falls helplessly in all directions. If backward, fix the neck, and there will be retroflexion (supposing the neck to be weak enough to bend); release the neck and the back deviation is retroversion. He believed there is always some prolapsus with retroversion.

Owing to the presence of the rectum and bladder, the cellular attachments of the vagina are limited to its sides; and this is why the vagina contracts, not as an elastic cylinder, but into a flat tube, the upper half being fixed; dilatation and contraction, for the most part, affects the lower half only, which must fall or rise in this to-and-fro relation with the former.

The muscular elements of the pelvic cellular tissue in the broad ligament move it automatically; what is retroversion at one visit, may be anteversion at the next,—probably most is due to the direction of pressure from the super-incumbent intestines.

No pessary, one excepted, can do much more than keep the womb out of the vagina. Then how account for the comfort attending their use? They ease the strain on the uterine cellular ligaments, which begin forthwith to retain their original tone and healthy condition. Every expectation of

cure must be after all founded on this property of vital elasticity, and what will it not effect in the cause of strain being removed? Aggravated cases of prolapsus of long standing are again and again held up permanently reduced after the perineal operation, but should this tissue have lost its elasticity, the best artificial perinæum would be sure to give way.

Hodge's was the best pessary, because in shape it corresponded with that of the contracted vagina, and permitted the series of retrograde but curative processes referred to. Hodge's was a modified Meig's; the great point was to ensure that the lateral vaginal action be unhindered. He knew a lady who by tying together the two ends of a piece of cane made a boat-shaped loop which answered perfectly. It was a marital consideration which led to Hodge's curious modification of the pudendal end of his instrument. Another authority, even more considerate in this matter, had cut off this end, and substituted india rubber.

It was regrettable to hear proclaimed far and wide pretensions to originality for what were unessential modifications. But Dr. Hewitt had avowed that his pessaries were borrowed from Hodge. No. 1 was a change in material only; No. 2 was Hodge bent on the middle into a large loop. In the diagram illustrative of its employment for anteversion, its position was an impossibility. No. 3 (with a uterine stem) had like the other two, as explained by Dr. Hewitt, its base of support in the vagina. Sir James Simpson's had a pubic branch. Once, only once, in Dr. Savage's experience did this fail to do grievous injury. In this case the patient certainly wore it unhurt, even in the ball-room, but was not the record of internal uterine pessaries one of disaster?

As to irritable uterus, Dr. Savage imagined the term had years ago disappeared from the professional vocabulary. Irritability was used by Gooch, implying some special and uniform morbid condition of the uterus; more recent experience had shown that in the case of the uterus irritability

was a symptom or rather exponent of not a small range of general as well as local affections.

When irritable uterus was beginning to lose ground, a case came under his observation which had for a considerable period been a puzzle to many; there being no sign, save this irritability, to lay hold of. It was now found that the introduction of the uterine sound caused extreme suffering. The patient rapidly recovered under caustic applications to the interior of the uterus; Gooch was a stranger to the sound.

One word more about the pessaries. Normal anatomy in case of the uterus, now-a-days, left scarcely any disease of it (its displacement certainly) obscure, but he wished not to travel away from the subject of debate. His own practice was to use some sort of pessary in every case of displacement, provided it could be tolerated without discomfort.

He wished it to be understood that in condemning intra-uterine pessaries, he did not include that of Dr. Hewitt, because he had had no experience in its use.

Dr. J. Braxton Hicks thought we could not entirely dissever in the present discussion the treatment from that of the mode of production of retroflexion of the uterus, because it was upon the results of treatment that Dr. Graily Hewitt had come to his conclusions. He thought it was a disadvantage in such discussions to import the term *two camps*, because that implied two opposites: as if nature was Janus-like, with only two faces, peace and war, between which there was no compromise. It was always found that if one person rose and shouted out "always," another may call out "never." And these words were tossed about from one to the other, so that a large amount of intermediate truth was quite overlooked. He thought this was the case in the present question. Now, he considered that for practical purposes cases of retroflexion were to be divided into four great classes, which run into each other in every degree. In the *first* class, he would place cases of congenital retroflexion where no pain had existed previously; and those in which the flexion having occurred a long time before,

all pain had completely gone off, every resisting part having accommodated itself to the change. It was impossible to say how many cases existed of this class, because, as they suffered nothing, they did not apply for advice, but the state was observed in looking for other troubles. In the *second* the retroflexion was *in transitu*, the supporting tissues were not yet fully stretched, so that when any straining or quick action of the body ensued the parts were put on the stretch and pain produced. In this class the largest amount of relief is given by mechanical support; generally, complete relief is obtained. In the *third* class he would place those cases where to the retroflexion a state of congestion, hypertrophy, and tenderness, more or less severe, were added. If these cases were handled roughly per vaginam, or with the sound, no doubt much mischief may ensue; but if the uterus could be replaced by the postural mode, or even by the sound gently used, then, the uterus being free from concussion against the sacrum, and the tension being taken off the ligaments, great amount of relief would be obtained, directly proportionate to the amount of tenderness and incompleteness of the flexion. The organ could be kept in natural position by Hodge's pessary, if carefully adapted, for it must be understood that the action of that instrument was not so much to push the fundus up as to keep the os uteri backwards so far that the retroflexion could not recur. The appropriate remedies for restoring the uterus to a healthy state could be carried on at the same time. In the *fourth* class he would include all those cases where the uterus was reflected, but either tied down by adhesions, weighed or pushed down by heavy tumours, or with a very tender ovary, &c., where the use of mechanical support would be generally more distressing than a means of relief. Dr. Hicks thought if these points were borne in mind it would assist us much in guiding us in the mechanical treatment of retroflexion of uterus.

Dr. Barnes was disposed to agree with much that had been expressed with Drs. Routh and Savage. He believed that simple retroflexion was a cause of real and serious

distress in many cases. He found that congenital retroflexion was more frequent than it was supposed to be by Drs. Routh and Hicks. Cases of severe suffering in single women due to it had come under his care. A year ago he was asked to see a young lady who had long been suffering from obstinate constipation; there being pelvic distress, he was requested to examine. There was decided retroflexion; the body of the uterus, turned back in the hollow of the sacrum, pressed like a ball-valve upon the rectum, impeding defecation; this difficulty led to protracted constipation, and after a time the intestines, from being constantly distended, had become paralysed. For this the patient had undergone a long course of treatment without effect. Dr. Barnes placed a Hodge's pessary; she experienced quick relief, and gradually, the uterus rising into its place, the intestines regained power. He had seen other similar cases. It was therefore certain that inflammation or other disease of the uterus was not necessary to the production of retroflexion. A most common cause he had found to be childbirth or abortion. This he had ascertained by having been frequently called in to treat secondary puerperal hæmorrhage. In many of these cases he found retroflexion, and, when the retroflexion was relieved, the hæmorrhage commonly stopped. After labour or abortion the body of the uterus was much enlarged; and if involution was retarded, and the patient got up too soon, the uterus would be apt to roll backwards. If not rectified at the time, the retroflexion became chronic, and various disorders ensued. Retroflexion was a disease of the body of the uterus, not of the cervix. He doubted whether inflammation of the os or cervix was ever a cause of retroflexion; it might be a complication, but curing that complication would not cure the retroflexion. The proper treatment was to restore the body of the uterus to its place. Hodge's pessaries answered admirably. He concurred in what Dr. Savage had said about bringing out modifications of Hodge's pessaries under new names. Hodge himself had made various forms. The one thing to remember was the principle. It was a lever, and must be made to float with the

vagina; it should not be fixed; the fault he had observed, was that the pessaries were usually made too large, so as to stretch the vagina. This was destruction of the principle of the pessary. He thought the Hodge's pessary could often be used advantageously whilst there was inflammatory complication. By supporting the uterus in its due relations, the hyperæmic condition of the body was relieved by the freedom afforded to the return of the blood from the engorged vessels. Treatment specially adapted to subdue the inflammatory or other complications might of course be pursued concurrently. It was by no means illogical to treat the epiphenomena, the consequences of a disease first. It was the grossest of fallacies to disregard these, and to limit our attention to the presumed cause. In most conjunctures in medicine he was compelled to treat the secondary complications. Indeed, it was only by observing these or removing them, that in many cases he was enabled to trace back and to discover the firmary disorder. And, in not a few instances, the cause would escape detection altogether.

Mr. Squire said:—"Among the depletory measures recommended by Dr. Routh, was the use of the hysterotome; it is against this that I rise to protest. I know that this instrument has been resorted to in cases of mere congestion and dysmenorrhœa with injurious results of long continuance; in these cases, where there is flexion, it is dangerous. Ovarian irritation also subsides under other remedies than leeching and blistering, if the use of alcohol be prohibited. In the puerperal state the involution of the uterus is greatly aided by lactation; it is retarded by alcohol, the use of which ought, therefore, to be limited where lactation is not carried on. Exact observation prevents me considering the puerperal state as a disease of more than a week's duration, and though for at least a month longer careful management is necessary, that does not consist in confining the patient either to her bed or to her house.

Dr. Priestley regretted that he was unable to be present during the earlier part of the discussion, for the subject was one of great interest, and there was now, so to speak, much

floating experience and many varieties of opinion concerning uterine displacements, which might be well reduced to an useful form by such a Society as the Obstetrical. He recollected the time when such conditions as uterine flexions and versions were altogether denied a place in uterine pathology by some authorities, or at least when they were regarded as unworthy of notice as causes of inconvenience and discomfort. Even now eminent authorities were not in accord as to their frequency and importance, and he might instance that while a great number of devices were before the Society that evening for the relief of anteflexion, he was informed by Dr. Greenhalgh that so eminent a teacher as Dr. Churchill, of Dublin, had never as yet met with anteflexion in the unimpregnated uterus. He quite coincided with what had fallen from Dr. Barnes in reference to the frequency and severity of the local symptoms sometimes associated with retroflexion, and the fact that in some cases the displacement was attended with no inconvenience, and was, perhaps, only discovered accidentally, did not prove that in other instances it was not the direct cause of much suffering. He could, indeed, go further and testify that within his experience retroflexion of the unimpregnated uterus had been productive of very grave symptoms, not alone in the region of the uterus itself and the organs more immediately surrounding, but in other and distant parts. Uncontrollable chronic vomiting had, in some cases, been the most prominent feature. He had one case fresh in his memory in which a lady of middle age, well educated, and not disposed to be hysterical, had for some years been suffering from what appeared to be progressive paraplegia, and had been treated by strychnia, galvanism, and the like, but rather grew worse than better, until she lost almost entirely the power of walking. She was sent to town for the purpose of ascertaining if perchance there was anything in the pelvis to account for the symptoms, and it was then ascertained that she had acute retroflexion of the uterus, the organ being entirely doubled on itself. Dr. Priestley did not at the time express an opinion that this displacement

was the cause of the loss of locomotive power, but in the lack of any other pathological condition to account for the symptoms, he suggested it might be worth while to replace the womb and keep it erect with a Hodge's pessary. The suggestion was adopted and the patient began soon to walk little by little, and is now gradually regaining the use of her limbs. In this case there were no symptoms distinctly pointing to uterine derangement, and the womb was not in the least degree markedly sensitive either to touch or manipulation.

When patients experienced pain in the pelvis in connection with uterine flexions, he felt confident that it was not always due to some superadded congestion or inflammation of the uterus; that it did not always, indeed, proceed directly from the uterus itself. In a clinical lecture, published some years ago, he had pointed out that the cause of the attendant suffering was often to be found in the condition of the ovaries. In the cases where the results were experienced in distant organs, the physical pressure caused by the displacement could not account for the symptoms, and we must rather have recourse to the supposition that the morbid symptoms arose from the reflex effects upon the nervous system.

He had no hesitation in recognising the classification suggested by Dr. Hicks, and in the treatment he would pursue an eclectic method, and deal with each case in accordance with its own peculiar features. When a displacement was discovered accidentally, and was the cause of no annoyance, he would be disposed to leave it alone. If it produced urgent symptoms, and there was no enlargement or tenderness, he would endeavour to rectify it and keep it in position. If it was notably complicated with congestion, inflammation, or hypertrophy, he would leech the organ; administer bichloride of mercury, or bromide or iodide of potassium as usual in these affections; keep the patient in the prone position, and when the acute symptoms were passed, endeavour to replace and retain the organ in its natural position by suitable means. He preferred the

moderate depletion which might be just sufficient to relieve the congestion and inflammation present, rather than the larger and frequently repeated bleedings alluded to in the discussion, and he did not regard depletion alone as a remedy for the displacement. He could bear testimony to the value of Hodge's pessaries, and in many instances the use of one of them might be the only treatment required.

Dr. Woodman said, that although much interested by Dr. Savage's description of the anatomy of the ligaments of the uterus, he could not help thinking that too much had been ascribed to *ligaments,* and that we should have to return to an older view, which ascribed the retention of the uterus *in situ* to the nice adaptation of all the contents of the pelvis and abdomen, one to the other. We were too much accustomed to place before our minds a skeleton pelvis, with only the uterus and its ligaments, and we were apt to forget the share which the intestines had in causing malpositions of the uterus. It was certainly a matter of constant occurrence to find several coils of intestine in the pouch of Douglass, and he knew of several cases of retroversion of the gravid uterus, which he believed were rightly attributed to retention of urine. He quoted cases of ante and retroflexion to show that the conditions might exist for years, apart from complications, and produce no inconvenience except sterility. In some of the worst cases it was almost impossible to adjust instruments which could be safely or comfortably worn, but by suitable local treatment, and the adoption of either the prone or recumbent *position,* much relief and often cure might be achieved.

DECEMBER 2ND, 1868.

Dr. J. HALL DAVIS, President, in the Chair.

Present—48 Fellows and 9 visitors.

The following gentlemen were elected Fellows of the Society :—J. Watt Black, M.D.; John Blair, Esq., (Melbourne), J. Edwin Child, Esq., Thomas Whiteside Hime, M.B. (Sheffield), and W. R. Jordan, Esq. (Moseley).

Dr. Edward Bousfield and A. MacDougal Rogers, Esq., were declared admitted as Fellows.

Dr. Sansom and Dr. Rogers were appointed auditors of the accounts for the current year.

Dr. SANSOM exhibited some pessaries containing fluids. He agreed with Dr. Meadows in thinking that the ordinary composition of medicated pessaries is unsatisfactory; he found that the success attending the use of astringents, incorporated with solid fat in the form usually adopted, was not such as might fairly be anticipated. He had now designed a plan by which any agent individually employed might be applied in the liquid state. The pessaries consisted of a hollow cone of white wax, in the interior of which was contained one drachm of the fluid desired to be applied, the apex of the cone being made of cocoa-nut butter, a fat which easily melts at the temperature of the body. One of these pessaries being introduced as far as it will go, the apex impinges upon the cervix; this portion of the pessary soon dissolves, and the contained fluid comes into contact with

the parts at the summit of the vagina; moreover the heat renders the outer coating of wax flexible, so that the natural presence of the part contributes to the extrusion of the fluid; the base of the pessary does not melt, but remains as a plug to prevent the ready escape of the fluid; it is usually voided after a time as it may be reserved by the injection of a little warm water. The advantages which this method presents are: (1) it is equivalent to the injection of a fluid which is presented under the most favorable circumstances for absorption; (2) action is confined to those parts which for the most part need it, thus astringents may be directly applied to the cervix, or, if this be dilated, to the internal surface of the cervical portion of the uterus; (3) the patient being herself able to introduce the pessary, which, as it else finds its own way to the parts upon which action is required, the necessity of frequent use of the speculum for local indication is avoided. In three cases in which the method had been adopted, the success was most satisfactory. Pessaries made by Messrs. Francis, containing (1) solution of tannin in glycerine; (2) solution of nitrate of silver; (3) solution of perchloride of iron; (4) solution of permanganate of potash; (5) various solutions of morphia; (6) tincture of matico, were exhibited. It is obvious that any fluid which does not dissolve the external coating may be employed.

ON THE TREATMENT OF IMPERFORATE HYMEN, WITH RETAINED MENSTRUAL FLUID.

By Edward Copeman, M.D.,

PHYSICIAN TO THE NORFOLK AND NORWICH HOSPITAL; HONORARY LOCAL SECRETARY OF THE OBSTETRICAL SOCIETY OF LONDON, ETC.

It may be thought by some that it is not the most profitable way of spending the time of a meeting like the present to discuss cases of very rare occurrence, since we are but seldom called upon to treat them. But there are some cases

in which the treatment may appear so simple, and yet the danger, if a mistake be made, is so great, that even should such a circumstance occur but once in a practitioner's lifetime, it is important that he should be aware of the danger, and know the mode of treatment most likely to ensure safety. I am about to draw your attention to cases of imperforate hymen with retained menstrual fluid, with especial reference to their treatment; purposely avoiding any description of the different varieties under which this may occur, and the malformations or imperfect development of parts sometimes connected with such a condition of things. I am speaking simply of imperforate hymen, preventing the escape of the menses, and leading to distension of the vagina and uterus, without other complication or deformity in either. It is a disease, as I have said before, of rare occurrence, and it is quite possible that some of you may never have to treat it even in a long professional life; but the case I shall bring before your notice will exemplify the great danger to which it sometimes leads, and will not probably fail to interest you. Dr. Marion Sims, a very experienced practitioner in female diseases, says he has never met with an example of it; and in a professional life of nearly forty years I have met with it only twice.

The diagnosis of imperforate hymen with retention is not difficult; pelvic uneasiness, backache, occasionally nausea and disordered stomach; a sense of weight and bearing down, increased at monthly periods; absence of menstruation without faulty or deficient development of the mammæ and genital organs; these are some of the general symptoms; and in confirmation, there is fulness in the uterine region, absence of vaginal opening, and tumour felt by introducing the finger into the rectum. Having thus made out the nature of the case, the remedy appears remarkably simple, viz., giving vent to the retained fluid by dividing the obstructing membrane; nevertheless, many such cases after this apparently simple operation have died of peritonitis. "Death has often speedily followed an incision of the hymen, when there was retention of the menses," says an experienced

author (Marion Sims). Dr. Graily Hewitt, a good authority, being aware of the danger, has given the following directions as to the proper operation to be performed. He says, "The plan ordinarily adopted has been by means of a lancet, or bistoury, or trochar, to make an opening in the hymen sufficient to allow of the escape of the chief part of the retained blood at once, and at the time of the operation. I would suggest that an opening just large enough to allow of the escape of a very minute quantity of fluid be made at first, and that this opening be made obliquely in the obstructing membrane, giving it a valvular character. The fluid should be evacuated *guttatim*. If the opening become closed, a second and similar opening to be made the following day, or two or three days later, and a firm but gentle support given to the abdomen by the aid of a bandage during the whole period of the evacuation of the fluid; the patient to be kept in a state of absolute rest. The aperture in the hymen should not be increased in size until the uterus has returned to its proper dimensions, the object being, at first, simply to allow the fluid to escape in the most gradual manner possible." But long before these remarks were made public, I related a successful case in my edition of 'Crosse's Cases in Midwifery,' 1851, in which I stated that my practice in that instance "may raise the question whether in such cases it is not better to make a simple puncture to evacuate slowly the retained fluid, and then leave the patient to recover entirely from the effect of retention of the menses before any other means are taken to open fully the passage into the vagina." In this case the girl did not suffer an hour's inconvenience from the first puncture, and then went on menstruating perfectly for many months. When the further operative proceeding was effected, she had been so long cured of her troublesome symptoms, that *no inflammatory tendency from retention of the menses could then have existed*, and she perfectly recovered. I will not be sure as to whether I was the first to recommend the very gradual evacuation of the fluid contents of the vagina and uterus in these cases, because there is nothing new under the sun;

but I am glad to find that a suggestion which I believed at the time to be original has more recently been advocated by high authorities in the present day. At all events, I fully commend it to the notice of the Fellows, in the belief that it ought to become an established rule of practice.

Case.—On the 12th of July, 1867, I was summoned to the sea-side to consult about the case of a young lady, fourteen years of age, of full grown womanly appearance, but who had never menstruated, nor, as far as I could ascertain, had the usual signs of the approach of that function, no pelvic pains, or weight, in fact no symptoms to attract the mother's attention to the subject. (I afterwards made out that she had frequently complained of inability to walk, and of uneasy sensations in the lower part of the body). She had a strumous look, and within a year or two had suffered rather severely from measles and some other fever; but latterly her health had been better than usual, and till within a few days she was active and enjoying the air of Cromer, to which place she had come as a visitor with her parents and little brother, (her real home being somewhere in the south of England). A few days ago she was seized with retention of urine and considerable pelvic distress, when Mr. — was sent for and was obliged to use the catheter; then he discovered that the vaginal opening was closed, and the hymen bulging as if distended by fluid; he was obliged to use the catheter twice a day, and on Friday, the 12th of July, he sent for me in consultation. I found an imperforate hymen, with retention of menstrual fluid to such an extent as to compress the urethra, form a large tumour to be felt in the rectum, and to cause enlargement of the uterus, quite perceptible to the touch above the pubes. From the amount of distension I thought she must have menstruated several times, but her mother could not remember any particular time that she had symptoms denoting such an occurrence. It was clear that an operation was urgent, and I strongly recommended that for the present nothing more should be done than making a small puncture with a lancet, and

letting the fluid run away of its own accord, being well aware of the danger of peritoneal inflammation resulting from the sudden escape of a large quantity of retained menstrual fluid. After explaining to the parents, not only the absolute necessity for an immediate operation, but also the possible danger of even such a slight one as that we now proposed, Mr. — simply punctured the membrane with the point of a lancet, reserving it for some future time to complete what might be further required to be done.

Two large saucers were filled with thick menstrual fluid *in a shorter time than I liked*, but it was allowed to ooze out of itself without any pressure or manual interference, and we hoped no ill consequences would follow. The removal of the fluid afforded immediate relief, and until the morning of the 14th all went on well. But on Sunday, the 14th, she had a severe chill followed by active febrile disturbance, very rapid pulse, and pain in the hypogastric and right inguinal regions. She had fever mixture, Dover's powder, and turpentine stupes to the abdomen; on the next day (15th) I saw her at 9 p.m., with a pulse at 140 or more, skin intensely hot and covered with a scarlet rash, which might easily have been mistaken for scarlet fever, except that she had previously had it, and there were no other signs than the eruption and fever. There was a good deal of abdominal tenderness, especially in the right iliac region, and some degree of tympanites. She was dull and listless, but had no severe headache nor any return of rigor. On passing a director into the wound, some muco-purulent fluid and air escaped, but no more menstrual fluid. We continued to foment the abdomen, and added some tartrate of antimony to the mixture.

On Tuesday, 16th, at 9.30 a.m.—She was still very feverish, skin hot and dry, nervous system confused, but no delirium or vomiting. Iliac region more tender, and coils of distended bowel visible through the parietes. We ordered a blister over the most painful part, to be followed by linseed poultices; and prescribed three grains of Dover's powder, and half a grain of calomel every three hours, and a turpentine

enema. The tongue was inclined to be dry, pulse rapid, and her urine dribbled away unconsciously. Appetite nil, scarcely anything being taken but toast and water, which she incessantly craves.

Wednesday, 17th, 9 p.m.—Manner and general appearance improved. Bowels acted well, but in the bed. Has passed urine twice knowingly, but some passes away unconsciously. Pulse down to 120. Tongue a little cleaner. The blister had drawn well, and there was less tenderness, but still some tympanites. Slept but little during the day, but was more quiet, and took beef-tea twice. Some foul and very offensive discharge escaped from the vagina on introducing a director into the wound.

Thursday, 18th, 10 a.m.—Had a very restless night, and was at times incoherent; towards 7 a.m. she had some quiet sleep. Took no nourishment in the night, and could not be prevailed upon to take anything but toast and water and her medicine. Passed urine twice voluntarily. Less tenderness under the blistered surface, but there is a tender and tympanitic state of bowel just above, and we ordered another blister to cover this locality. Skin still dry, and very red. Bowels not again relieved. Cont. Cal. and pulv. Dov., et reptr. enema terebinth.

Friday, 19th, 8 p.m.—Slept well to-day, but had griping pains in the night, followed by action of the bowels, without power to prevent the motions from passing into the bed. Pulse rather more than 120. Tongue cleaner, but too red. Less heat of skin. Abdomen neither so tense or so tender, but there is a feeling to the hand as if the intestines were glued together in the right iliac region. Blistered surface to be dressed with mercurial ointment, and the dose of calomel reduced to one quarter grain every four hours. Complained of soreness from lying, and we put her on a water-cushion, the disturbance of which she bore better than we expected. Passed urine twice. On introducing the director into the wound, the discharge which escaped was less in quantity and less offensive, and there was no escape of air.

Saturday, 20th, 9.30 a.m.—Had a quiet night, sleeping a

good deal, but took nothing besides toast and water; she could not be persuaded to take anything else, although she seemed low for want of nourishment. She looks subdued; skin cool, and feet rather cold. She said she was better, but thought she should not get well, neither did she wish it. Bowels acted, and water passed during sleep. Very little discharge from the vagina and that much less offensive. Abdomen still tender, especially in the right iliac region, where the intestines feel as if glued together. Tongue clean. Altogether perhaps in rather a more favorable state, though the pulse is still over 120 and of less strength. Had an extra dose of Dover's powder in the night. Advised egg and wine. To take the calomel with every alternate dose only of the Dover's powder.

Monday, 22nd (letter from surgeon).—"During the whole of yesterday the state of our patient continued just as you saw her last. The bowels showing a tendency to relaxation, I gave her a little more opium last night. Her condition is, I think, slightly improved this morning. Abdomen less tense and less tender. Countenance good. Tongue red and inclined to dryness. Pulse 128, skin hot, but less so than it had been. *Per rectum,* the uterus is felt enlarged, but is not *very tender* to the touch. I hope you will consider this brief report favorable. The state of the pulse and the hot, dry skin still indicate, I fear, the persistence of inflammatory action, though in a less violent degree."

Sunday, 28th (from surgeon).—"Our patient has certainly improved since I last wrote to you. The pulse has gradually fallen to below 110. There is also much less heat of skin, and the abdominal swelling and tenderness are abated. The most troublesome symptom of late has been frequent fits of pain in the belly (tormina), each followed by a little discharge from the bowels; for the first two or three days this discharge was quite feculent, and I thought it due to the mercurial, but since the day before yesterday it has been only a gelatinous mucus like the white of egg, and almost as transparent. A similar discharge now escapes from the vaginal opening when the director is introduced. The uterus,

per rectum, is felt much enlarged, but is not very sensitive. In consequence of some febrile heat and hypogastric tenderness I applied another blister on the 26th, and in the evening of the same day, the griping pains being very troublesome and no proper stools having passed, I gave ʒij of castor oil. This produced a good relief from the bowels, but the mucous discharge has continued still the same. Tongue inclined to be dry. She is thirsty and has no appetite for food, but takes a little beef-tea, and cocoa with milk, and the egg and wine once in the day. Owing to the irritable state of the bowels I did not give the tr. of iron before, but began it yesterday. (I had recommended this as soon as she got a little better.) She is now taking it every six hours with 5 ɱ tr. opii with each dose.

"29th.—I was prevented finishing this note yesterday, and have just seen the patient this morning. She had a very poor night from frequent attacks of severe pain in the bowels; has had three stools since five o'clock, and repeated discharges of the glairy mucus. Pulse 118. Tongue tolerably moist. Have ordered the tr. of iron to be discontinued for the present, and the Dover's powder to be given if the pain and diarrhœa continue."

In answer to this letter I urged a free use of opium if the griping continued.

Sunday, August 11th (from surgeon).—"Up to the 6th instant the progress of our patient seemed in all respects satisfactory. The swelling and tenderness of the abdomen gradually subsided, the attacks of pain became less severe and less frequent, and the mucous discharge had almost ceased. The pulse had fallen to below 80, and the appetite was improving. She was allowed some chicken or fish once a day, and took a boiled egg with bread and butter for breakfast. On the 6th she was again feverish, but had no shivering; pulse about 90, and she had pain in the *left* hypochondrium. The bowels had been regular and stools healthy, and no circumscribed swelling or tenderness could be detected. Next day the pulse was 100, and the pain continued. On the 9th she was no better. Pulse 108. On the 10th it was

110. This morning (11th) I find she has had a good deal of pain in the night, extending from the left hypochondrium, down to the left iliac region. Skin hot. Pulse 115. Urine high coloured but clear. Tongue rather furred, but moist and tolerably clean at the end and edges. Bowels relieved during the night. Has eaten an egg with a little toast for breakfast. On examination, I think, there is hardness and some slight swelling to the left of the mesial line from the pubes to above the umbilicus, but it is very indistinct, and pressure does not much affect it. *Per rectum,* the uterus is felt large, but is very little tender; there is still mucous discharge from the opening in the vagina. I fear some mischief is brewing, but at present its nature is very obscure."

September 25th (from surgeon).—"Her general health has improved, and she gradually recovers flesh; and for a few hours every day changes from the bed to the sofa. But she cannot bear any sort of rough movement and is afraid to attempt walking. There has as yet been no sign of a catamenial nisus, and, until this occurs, I think it would hardly be advisable to proceed further with the view of enlarging the vaginal opening. I take care to keep the original opening quite patent. She still has attacks of febrile excitement, and now and then severe aching pains about the iliac fossa, extending down the thigh to the knee."

October 15th (from surgeon).—"I think our patient is now well enough to justify the adoption of further proceedings with a view to her complete cure. There has as yet been no catamenial period, and, unless you think it would be unwise to attempt anything more *before* this takes place, they are anxious to get it over, and the girl's health seems quite good. Will you write a line and let me know what you think about it; and if you consider it safe to proceed you might fix a time when you would come over, as I should prefer your being present, and having your entire sanction in what was done."

In consequence of this letter I went over on the 21st of October and found the patient quite well in general health. The

vaginal opening would readily admit a female catheter, and by slightly nicking it on either side we were soon able to dilate it sufficiently to admit my little finger, and, on repeating our attempts at dilation the next morning I could introduce my fore finger its whole length as easily as into almost any virgin vagina. The os uteri felt a little patent, as if complete involution of the uterine structure had not yet taken place after the considerable dilatation it had undergone; there seemed also to be a slight narrowing of the vagina around the cervix uteri; but there was nothing that positively indicated any malformation, and I gave it as my opinion that all would now be right. The parents questioned me as to the possibility or propriety of marriage should such a subject be ever proposed to her, and I expressed my belief that no physical objection would exist provided no accident followed the present operation.

On the 5th of November her surgeon wrote to tell me that no bad symptom had arisen in consequence of the last proceeding—He adds, "She seems quite well in health, and the aperture is now large enough to admit two fingers after a little gentle pressure. No signs of the reappearance of the catamenia at present."

So ended this serious and interesting case, and I have thought it right, although at the risk of tiring your patience, to bring it before you thus at length, because it exemplifies the great danger that may occur even when that danger was placed steadily in view, and precautions were taken to avoid it. No doubt, although there was only a puncture made with a lancet, and that not a large one, the opening was large enough to allow the accumulated menstrual fluid to escape *too quickly*, and hence arose the dangerous illness which followed. The patient very narrowly escaped death; and had any surgeon performed the operation without knowing that, although so slight and simple, it might prove fatal, and had assured the friends that it could do no harm, the patient's illness or death would have come like a thunderclap upon the parents or friends, and great discredit might have fallen upon the practitioner for speaking lightly of what had caused

such melancholy results. In this instance the parents were made most fully aware that danger might ensue, so that when severe illness did appear they were not taken by surprise; and, instead of reflections upon the medical attendants for want of knowledge or want of honesty, they reposed in them the greatest confidence, and did all they could to aid their efforts to restore their daughter to health. It is with the view of securing all present from the chance of treating such a case lightly, and possibly losing credit and reputation, that I have dwelt so long upon the subject; and this must be my apology for trespassing so much upon your time.

Dr. Barnes said there was one feature in the clinical history of these cases to which he did not think attention had been drawn. It was that the crisis of intolerance caused by the accumulation of fluid in the cavity of the uterus was postponed by two partially compensating conditions. The first was that the watery part of the menstrual blood was absorbed, thus lessening the bulk of matter retained in the uterus. This was seen in the thick, treacly fluid that escaped when an opening was made for evacuation. The other condition was that, after the uterus had been distended by the accumulating fluid, a supplementary receptacle was made by the dilatation of the vagina above the seat of obstruction. The pouch formed in the vagina was often very large, and might, when opened, lead to the belief that it was the uterus itself, unless care were taken. But for these two compensating conditions the crisis would inevitably come much sooner. He had seen several cases in various forms. With regard to priority in recommending the gradual evacuation of the retained menses by a small opening, it was not known who was entitled to credit. He was under the impression that it had long been admitted as the wiser course. Certainly, in a case which he had treated some years ago at the London Hospital, that principle had been adopted. A moderately small opening in the hymen was made and forty ounces of treacly fluid flowed out in the course of forty-eight hours. The patient did well. In another case, of a woman whose vagina had been completely closed up by cicatrices after a severe labour, all the symptoms of retained menses followed, and her state was so low that her life was despaired of. He dissected up the vagina and reached first a secondary sac formed by the dilatation of the fundus of the vagina, and then the uterus. A considerable quantity of treacly fluid slowly escaped, and recovery followed. Another case had happened in a way which, perhaps, ought to have been prevented. He had some months ago removed by the wire-ecraseur the vaginal portion of the uterus affected by

cauliflower excrescence. The removal was complete and recovery rapid. The woman anxious to return home, left the hospital before sufficient means had been taken to preserve the cervix open. She returned with symptoms of retention of menses. He had great difficulty in opening up the closed cervix. It was, however, done and a quantity of characteristic fluid escaped. She again went out, to return after a time with similar symptoms. An opening was again made, but this time severe pelvi-peritonitis followed, from which the patient is now recovering, He did not gather from the author's paper that any distinct opinion was expressed as to the causes of the danger and mortality which so often followed these operations. He thought it was still a problem requiring comparison of many cases to clear up. In some cases the cause seemed to be this. The uterus suddenly collapsing concentrically tended to expel its contents by all the openings into it. Fluid escaped of course by the vulva, but the fallopian tubes, also distended by the fluid, poured it out into the peritoneum, setting up inflammation. With regard to pressure he was disposed to differ from Dr. Copeman. He believed moderate pressure on the uterus after operation by a bandage was useful.

With reference to the question of opening into the uterus by rectum he must remind Dr. Routh that there was always air in the rectum retained by the sphincter; and he asked Dr. Phillips if he could inform the Society as to the result of some cases which had been punctured by the rectum in Guy's Hospital. His own impression was, these cases did not give much encouragement to pursue the practice.

Dr. Tyler Smith could not quite agree with the author of the paper on one important point. So far from avoiding pressure on the abdomen he would insist upon it as the chief means of averting risk. In these cases the uterus was distended rather than developed, and on the withdrawal of the fluid the uterus did not contract as it did after parturition. He believed the danger was caused by the entry of air into the flaccid uterus. This caused decomposition, and led in the first instance to metritis and then to peritonitis. Similar mischief sometimes occurred from the entrance of air into ovarian cysts after tapping. The fœtor and escape of air in the case narrated was to be explained in this way. The evacuation of the uterus and vagina by a small trocar had long been practised, but to do it guttatim when the uterus was of large size would be an interminable process. His own plan was to make a moderate opening and to keep up firm, steady pressure on the abdomen by bandaging as the fluid escaped, so as to prevent the entrance of air into the uterus.

Dr. Routh said, ably written and very interesting as was the paper read, he thought the details pointed out to a course of treatment somewhat opposite in some respects. Looking at the

question physiologically, he would remark that the vagina during the act of *in*spiration, being pressed upon by intestines, had a power to expel any air or contents in it, whereas during *ex*piration these were drawn up and the vagina sucked up air. This he had proved by the *kinometer*, an instrument described in his Lettsomian lectures on Fibrous Tumours. Now it was clear that any opening made into the vagina (once the excess of fluid had got out) would gradually lead to the sucking up of air and putrefaction of the contents, which occurred in this case. This was precisely, also, what occurred in cases of cellular abscess pointing into, and *opened per vaginam*. Air was soon sucked in and the most offensive fluid produced, giving rise to irritative fever and typhoid symptoms, &c. Exactly the same thing occurred in cases of labour, where, after delivery, matters were returned and which became fœtid, producing one variety of puerperal fever. As in cases of cellular abscess, when pointing, he preferred an opening *per rectum*. The offensive odour was in this manner prevented; it was very easily done, the only care necessary being to avoid wounding a vessel, which could always be felt pulsating before. It was also most easy to make that opening slanting, so as to act as a valvular opening, and when all excess had been removed and the uterus had contracted, then a vaginal opening might be made free and large, and the danger of peritonitis or septicæmia avoided. This opening per rectum, he understood from Mr. Baker Brown, had been twice successfully done by him, and the patients got well without a bad symptom. The only inconvenience from this preliminary treatment was tenesmus, which after all was a very small evil, and experience had shown that the opening per rectum readily healed, and offensive gases did not find their way into the vagina.

But, 2ndly, as a preliminary measure. Firm bandaging had been recommended by Dr. Tyler Smith. Dr. Barnes, on the contrary, stated it should be gradual, lest by too much pressure we should force fluid through the distended fallopian tubes into the peritoneum. But why not in such cases proceed as we did usually in cases of miscarriage — give ergot, and the uterus would contract upon the expelled fluid, and then a bandage could be safely applied.

But, 3rdly, when the opening per vaginam had been made and the fluid became offensive, why not follow the usual surgical rule? "Wherever we have offensive pus or fluid poisoning the system make a large opening and let it out," and if need be wash out with some disinfectant, as carbolic acid or iodine, just as you did in cases of offensive lochia. Not to do so was to court death by letting your patient die of septicæmia. In this very case the fever and severe symptoms present he thought might be due to this cause.

Dr. Rasch related the case of a spare built, child-like girl of fourteen, where the vagina was closed by a firm, bluish-grey hymen, the bulging forwards of which was increased by gentle pressure on a visible abdominal tumour, reaching to about two inches above the pelvic brim. The finger in the rectum confirmed the diagnosis of a vagina and uterus distended by fluid. The hymen was pierced by a small trocar, and the canula removed after about half a pint of treacly, chocolate-coloured, odourless fluid had slowly oozed out. Absolute rest on the back was rigourously enjoined. About another half-pint of the same fluid came away through the much contracted puncture during the next two days. With great difficulty the patient was kept on her back for nine days. She had not one bad symptom.

Dr. Rasch could not agree with Dr. Routh as to the advisability of evacuating the menstrua retained by imperforate hymen by an operation through the rectum, as a second operation would have to follow to open the hymen. In Mr. Baker Brown's case, which had been cited in support of Dr. Routh's view, there was complete absence of vagina, as Dr. Rasch had occasion to confirm, and there was certainly no safer operation to choose, the curved canula in that case *was* left. ('Surg. Home,' November 21st, 1861.)

With regard to air entering the vagina, Dr. Rasch's experiments and observations had convinced him that *no air enters the vagina of a woman on her back*, as there is no natural power to overcome the close apposition of the vaginal walls; while, on the contrary, in the lateral position, and much more so in the female resting on her knees and elbows, air may enter, and certainly does enter, when the lower part of the vagina is kept distended. The air then rushes in, but fortunately not with a power of fifteen pounds to the square inch, as Dr. Marion Sims believes, but with a force very considerably smaller, and varying with the degree of resistance of the abdominal walls, and the weight and mobility of the womb.

In answer to Dr. Rasch, Dr. Routh said that the vagina, only when the patient had her legs closed, did not suck up air. The cases of flatus expelled by the vagina had been shown in this very variety to be due to a vermicular action of the mucous membrane, by which air was sucked in; and when a patient sat down, as for instance during defæcation, air could not but penetrate up the vagina.

In reply to a fatal case, where the incision was made per rectum, Dr. Routh stated that the reason was the canula was left projecting from the rectum, which he stated should not be done, the moment fluid had ceased to flow from it. It should simply be withdrawn.

Dr. Alfred Hall, of Brighton, related a case of retained

menstruation from imperforate hymen, which occurred in his practice two years ago. The patient was in her nineteenth year. Dr. Hall made a tolerably large opening through the membrane, and after the escape of a considerable quantity of characteristic fluid, he washed out the vagina with warm water. The case had done perfectly well, and at the end of three months the catamenia came on naturally.

Dr. Wynn Williams remarked: We ought to bear in mind what is the reason such untoward and often fatal results follow operations for the removal of retained lochiæ. It is undoubtedly the absorption into the system of the emanations of putrid animal matter, resulting in septicæmia, producing, in fact, a state similar to that which we find in malignant puerperal fever.

Now this disease can be produced, and has been produced, by actual experiment in America, by injecting putrid animal matter under the integument of the vagina in animals in the puerperal state. Indeed, it is not necessary that the animal should be in the puerperal state, as the same disease, that is the same altered condition of the blood, can be produced by injecting putrid animal matter into the tissues of perfectly healthy animals.

This he had himself on several occasions proved by injecting putrid animal matter under the skin of guinea pigs. Now the remedy for this state of things is the free use of disinfectants, of which there are several. My colleague, Dr. Routh, has mentioned one—carbolic acid, and there is also the solution of permanganate of potash, or Condy's fluid, and his own favourite remedy, tincture of iodine. He had proved that these poisonous emanations of decomposing animal matter may be rendered inert. Thus, he had on several occasions taken some putrid matter of patients who had died of different diseases, and injected it, one portion in a pure state, with another he had mixed a few drops of tincture of iodine before injecting, the result being that the portion disinfected by iodine was rendered inert, whereas in all cases in which the non-disinfected matter was used the animals died with well-marked symptoms and post-mortem appearances of septicæmia. Only a few weeks ago he was called up to a case of puerperal fever, depending on absorption of putrid emanation from a highly offensive sloughing of the mucous membrane of the vagina. In this instance he used Condy's fluid, not having any tincture of iodine handy ,washing out the vagina by means of a large syringe again and again, with the result of seeing the patient placed in comparative safety, she having fallen into a comfortable sleep before he left the house. He thought too much stress had been laid upon the entrance or non-entrance of air into the vagina, as it must not be forgotten that all collections of matter inside the pelvis, even in the male, who of course have no vagina

for air to enter, are almost always offensive. He believed that the close proximity of the gases in the rectum would be quite sufficient to set up putrefaction.

Dr. PHILLIPS said that, in considering the treatment of these cases of menstrual retention, it was important to ascertain what was the cause of the dangerous symptoms which so frequently supervened on operation.

If the danger be one simply of putrid absorption from the surface of the uterus, after the introduction of air *per vaginam*, the entrance of which it was difficult to prevent, then the treatment recommended by some of the previous speakers, by the firm pressure of a bandage on the abdomen, by the use of antiseptics, and by free incision, seemed most justifiable. He, however, believed that the more immediate danger, and the one most frequently met with, was that of acute peritonitis, caused probably by the escape of some of the uterine contents into the cavity of the abdomen, even after a free external opening had been made. In the only fatal case which he had seen, death resulted from this cause in a few days, although the usual precautions had been taken. On a *post-mortem* examination the cavity of the peritoneum was found to contain a considerable quantity of grumous fluid, with which also the fallopian tubes were greatly distended.

There existed, also, some old adhesions on the posterior surface of the uterus, and these bands had evidently undergone recent inflammation.

Dr. Phillips then referred to some cases treated successfully by puncturing the uterus through the rectum. This method, however, offered only temporary relief, as the opening generally closed, unless the tube was kept in for a longer period than seemed advisable. Gradual evacuation of the uterine contents, or permitting the escape only at short intervals was, he believed, the best form of treatment. He had had the opportunity of seeing several cases of contraction of the upper part of the vagina, and of the cevix uteri with menstrual retention, healed successfully by Dr. Braxton Hicks, by a very sparing use of the knife, and by subsequent dilatation by the sea-tangle tent.

Dr. ARTHUR EDIS remarked, in reference to Dr. Routh's suggestion, viz., puncturing per rectum to preclude the possibility of air entering the sac, that the only case he had seen so treated was fatal. In this case there was no vagina, the puncture was made per rectum with an ordinary curved trocar, the canula being allowed to remain in, a few ounces of thick, treacly fluid followed the operation the discharge continuing for two days—when it ceased; great pain in pelvis, occasional faintings and other constitutional symptoms ensued. A violent paroxysm of pain on the fourth day terminated by above a pint of the same

treacly fluid being suddenly discharged per rectum, after which the patient was easier. On the eighth day the canula was removed, slight discharge continuing.

At the end of five weeks, the patient being one day better and another worse, her condition still far from satisfactory, the uterus was again punctured per rectum, and the canula retained in position for four days when it was removed. Two months after her admission, her average pulse being then 120, her temperature increased, and the skin sallow. The patient concluding she was going to die wished to leave the hospital, and within a few weeks from the date of her discharge she gradually sank. From the constitutional symptoms arising in this case it was fair to conclude that air had general access to the uterus through the puncture, the mere letting out of the accumulated fluid, although often attended by severe symptoms, scarcely giving rise to such serious consequences as in this case resulted.

The PRESIDENT—The case of Dr. Hall reminds me of that of a young woman brought to me under like circumstances by her mother, a poor woman. The hymen was imperforate, bulging outwards under the pressure of the retained menstrual fluid, the dark colour of which could be seen through it. To have opened the hymen at the patient's visit would have been very easy, but deeming it a risk that she should have to walk or ride home after the operation, I forwarded her to the Middlesex Hospital as an in-patient, where it was done with a happy result, which most probably would not have followed the contrary hazardous course.

A firm bandage with compress should always be applied around the hypogastrium before the opening is made, and gradually tightened as the fluid escapes. This is a wise precaution to prevent a vacuum in the uterus after the escape of the fluid, and the rushing in of air from without to fill it. This I know to be quite possible, and the serious consequences of such an accident have been fully shown.

As to the employment of disinfecting injections to correct any putrescency in the fluid at the time, or subsequently to the operation, I look upon them to be as reasonable here as where we adopt them for the removal of such putrescency in the vagina or uterus, under other circumstances.

With regard to the question proposed by Dr. Routh, whether it would not be better to discharge the retained catamenial fluid by an opening from the rectum into the vagina, I must say the results of that operation do not seem to be in its favour, and it appears self-evidently wrong to make an entry for the fæculent gases from the rectum into the vagina, and rational as also involving less interference with the tissues of the patient to make the opening where it is permanently required, through the hymen.

One case of retained catamenia from occlusion of the os uteri after a protracted and instrumental labour, was sent to me from the country some years ago. The lady had been delivered fifteen months before, and believed herself pregnant. I decided otherwise. I found the uterns enlarged as at four months' gestation, but presenting in the vagina a bulging, rounded, fluctuating prominence, with no indication of the former position of the os uteri. Having opened the bowels I applied a firm bandage, with compress over the abdominal swelling, and then perforated the cervix at the centre of its prominence with a canulated trocar. I left the canula in the uterus for a time, and then replaced it with a gum elastic catheter. The fluid discharged was dark coloured, of the consistence of treacle, and not offensive. On the fifteenth day a natural menstrual period recurred without any inconvenience. After this she was incautious, exposed herself to cold and had shivering, metrocellulitis and much pyrexia followed. She perfectly recovered, however, and continues, now ten years since, a healthily menstruating subject, but has not again been pregnant.

A CASE OF TEDIOUS LABOUR, DELIVERY BY FORCEPS, AND DEATH OF THE PATIENT ON THE THIRD DAY, PROBABLY FROM THROMBOSIS OF RIGHT HEART AND PULMONARY ARTERIES.

By William Martyn, M.D., F.R.C.S.

Mrs. C—, æt. 38, a publican's wife, tall, stout, and well-formed, was taken in her second confinement with labour pains at full time on May 17th, 1868, and sent for me at nine o'clock in the evening—her first pregnancy terminated prematurely, the child having died in utero.

I found my patient had frequent pains, with every pain a want to pass water; her belly was very large and broad. I remained some hours with her, during this time, up to three o'clock at night, there was no progress in the development of the os; the pains would allow her no rest; the os, at this time, was the size of a shilling; at ten o'clock the following

morning very little change; she was not able to take a moment's rest. I had given her an opiate, for she had lost much rest for many previous nights. I ordered plenty of light nourishment; she went through the day in much the same state, harassed with incessant pains producing little effect on the os.

The early part of the evening the membranes bulged through the os; when the os was pretty well open I ruptured the membranes, hoping that by reducing the bulk of the contents of the uterus better pains might follow. A firm binder had been for some time applied over the belly. Waiting for about two hours, the os not receding from the head of the child, the pains being very insufficient, whilst the pelvis appeared to be roomy, I gave ℈ij of ergot. My patient was very worn and weary; I also gave some champagne. From time to time nourishment had not been neglected through the day; no improvement followed the ergot; the patient complained of constant pains, but the head scarcely advanced at all; the os was very long indeed in receding from the head. I gave a second dose of ergot without more success; indeed from the commencement of her labour she had no ordinary expulsive pains. At this stage, now about half-past eleven p.m. on the 18th, the head had not reached the perinæum. Finding my patient very much exhausted, and her pulse becoming quick, I decided to assist the delivery with the forceps. The head was evidently engaged at the brim. I had some difficulty in clearing the head from the brim with the forceps; this accomplished, it came into the world precipitately, rupturing the perinæum up to, or slightly into, the rectum, notwithstanding that I had used much caution to avoid this accident. The placenta I was obliged to remove by introducing my hand, the funis having separated on slight traction. The placenta was small; the child, a male, one of the largest I have seen at birth, was dead; its movements had been distinctly felt by the mother in the course of the previous evening. There was no important hæmorrhage; having applied a firm bandage with strict injunctions that it should be so maintained. I gave

my patient two grains of opium, ordered nourishment, and left her for the night.

May 19th.—My patient had had some good sleep; had passed water; pulse about 100; she seemed in all respects to be doing well. I put two sutures in the perinæum; prescribed a grain of opium night and morning if restless or suffering much; the vagina to be well washed out two or three times in the day with diluted Condy's fluid, and carbolic acid mixed with oil to the wounded perinæum and kept constantly there; the patient to pass her water on her knees if possible.

In the evening she was going on apparently well. The following morning, May 20th, she was not so well; she had rested little, was very thirsty, and complained of pain in the lower part of the belly, with a feeling of heat shooting through the vagina. The uterus was much enlarged and very tender; the belly distended with flatus; the lochia offensive. Fomentations were ordered; brandy and champagne to be given freely through the day. About mid-day some diarrhœa set in; her pulse had become quick, 120; she was feverish and anxious; there had been no shivering; late in the evening found her pulse about 140, very small; breathing quick and deep, 40 in the minute; at about every fifth breath a deeper breath or sigh; the breath was coldish; the extremities inclined to be cold and dusky; the belly very tympanitic; uterus in the same enlarged tender state; mind clear, and appearance of patient not bad; had passed water through the day; breath sounds loud throughout the chest; no râle or rhoncus to be heard; no dulness of the chest, no cough, but she complained of great distress in the sternal region; the heart beat tumultuously; no bruit was heard in the heart sounds. Her state was very remarkable at this time, and pointed clearly, in my judgment, to a clot forming in the right side of the heart, or some considerable degree of plugging of the pulmonary arteries. The breathing was as deep as possible, and yet she wanted breath. She complained of nothing but distress in her chest, and want of air; her mind was clear, but her manner very anxious; her move-

ments tremulous. At this stage of the case Dr. Playfair met me in consultation. We ordered a turpentine injection and stupe; a table spoonful of brandy with essence of beef every hour, and hydrochloric acid diluted in ℥xx doses every two hours; carbolic acid powder to be applied on napkins to the vulva frequently; after the vagina was well washed out with Condy's fluid, an opiate to be given.

We met at about twelve o'clock the following day: her condition in all respects worse; we prescribed ether and ammonia to be given frequently, but nothing stayed the progress of the case to death; the breathing continued the same, as deep as her powers were equal to; her pulse very rapid, and sometimes in the day scarcely to be felt; her extremities became more and more livid and decidedly coldish, reminding me very much of the cold stage of cholera; towards afternoon the pulse could scarcely be felt; her breath was markedly cold; her mind now wandering; soon she seemed to sleep; this state passed into stupor, in which condition the body became warmer, the air passages filling with mucus; at six o'clock in the evening she died.

This case presents, I conceive, many points of practical interest:—

First, There was the remarkably slow dilitation of the os, whilst the pains were so frequent. The signification of this state of things in relation to labour I take to be worthy of attention.

Secondly, As to the death of the child. I cannot but regard the ergot as a probable cause of this event (powdered ergot used). The cord was not twined around the body of the child.

Thirdly, As to how far this case would have been likely to have done better without the use of the forceps.

Fourthly, As to the character of this form of septicæmia, causing, as it did, clotting of the blood in the heart or pulmonary arteries. Although this condition was not verified after death, the symptoms leave no doubt, I think, as to the existence of such a state of things.

When we meet with deep and quick breathing without

signs of chest disease; distress in the chest; cold breath; a cold or coldish, and more or less shrunken and pale or livid, state of the face and extremities; the pulse quick and thready and sometimes not to be felt; manner anxious and restless; obstruction, more or less, of the circulation in the right heart or pulmonary arteries is decidedly indicated. I have satisfied myself of this by examination of the dead body in many instances; and our records are not wanting in examples of the same kind. I take it that this form of septicæmia is one of the most rapid in its effects of that very formidable group of disorders.

The collapsed state connected with obstruction in the pulmonary arteries, it appears to me, closely resembles the collapse of cholera; it would have been well in my case to have noted the quantity of urine and bile, if any, secreted from the time the signs of obstructed pulmonary circulation were evident, so as to establish, as far as possible, the relation, if any, existing between these two conditions.

Dr. Wynn Williams said, the case just alluded to in the discussion on the previous paper had so close an analogy up to a certain point to the case just related, that he would, with the president's permission, give very briefly an outline of it. He was called in by a medical practitioner to see a young woman, primipara, who had been many hours in labour; he found her with a very quick pulse, very anxious. The vulva and vagina turned hot and dry, the head pressing firmly against the pelvis, indeed so closely that he had some difficulty in passing an elastic catheter into the bladder, after taking the usual precautions. Chloroform having been administered by Mr. Rugg, I succeeded with some considerable difficulty in delivering the head with the forceps; after their removal a strong expulsive pain forced the shoulder of the fœtus (dead) through the perinæum, causing a rent not to any very great extent, but sufficient to require the insertion of two or three stitches. She appeared to progress favorably until the second night, when I was called to see her. I found her suffering from all the varied symptoms of puerperal fever in a semi-anxious condition, pulse upwards of 140, tenderness of the abdomen, &c.,&c. On making an examination I found that the lochia had ceased, the mucous membrane of the vagina sloughing, gangrenous, and highly offensive; the stitches also were sloughing out. As previously mentioned, the parts were washed out again and again with Condy's fluid until all smell was removed, the same means being frequently

had recourse to during the several following days: he also mentioned that she took calomel and opium, sulphite of soda, with an occasional aperient, bark and aromatic confection; turpentine stupes and hot fomentations were also applied to the abdomen. But he firmly believed the favorable termination of the case was due to the timely use of the disinfectant in this instance, Condy's fluid. Mr. Rugg, who had the future management of the case, subsequently informed me that the patient did well, but that he had had to open two secondary abscesses, one on the left mamma, the other on the buttock; this plainly demonstrating that blood poisoning must have taken place.

In answer to Dr. Playfair, Dr. Wynn Williams remarked that he had stated that the cases were analogous only up to a certain point, that in all such cases thrombosis was subsequent to and dependent on the blood poisoning.

Dr. Squire asked what form of ergot was administered? It was now twenty-seven years since M. Bonjeau, of Chambory, separated by means of otter the poisonous oil from ergot, and obtained a perfectly safe medicine, such as we now have in our pharmacopœia; a drachm of this preparation is an efficient dose, while an ounce of it would have no deleterious effect upon the life of the child: six drachms have been taken within the five or six hours preceding delivery: a perfectly healthy child born.

Dr. Barnes was disposed to attribute the source of the offending matter in the blood which caused the thrombosis to the change wrought in the uterine tissues and blood by protracted labour, and not to the injury of the perineum. He had lately seen a case of pulmonary thrombosis after labour, the symptoms in which were so alarming that rapid death was anticipated. He prescribed six leeches to the region of the heart, and to his great surprise the patient recovered.

Dr. Playfair said that the rupture in the perineum and its sloughy condition were probably the starting-point of the morbid condition of the blood in this case. He quite agreed with Dr. Williams that such sceptic states strongly predisposed to this accident, and thrombosis almost always occurred where there was some special state of the blood favouring the separation of fibrine, probably the most common cause being the alteration of the blood, resulting from hæmorrhage during or after labour. Indeed, he considered thrombosis in the right side of the heart to be precisely analogous in its causation to the coagulation of the blood, which takes place in phlegmasia dolens—the difference being that in one case the fibrine is deposited in the central organs of circulation, and in the other in some of its peripheral vessels. Thrombosis was often confounded with embolism; but true embolism was always secondary to thrombosis, not of the heart, but of some portion of the peripheral circulation; and it

was not until the clot so formed had had time to change and soften, that a portion of it became detached and carried to the right side of the heart, forming there a nucleus round which fibrine was subsequently deposited. Hence thrombosis of the right side of the heart was always met with, as in the present instance, a few days after delivery, while embolism, on the other hand, was never observed until a much later period—generally after the fourteenth day. The cases can be further distinguished by the presence of a portion of fibrine corresponding in structure to the clots found in the peripheral vessels, which can always be detected as nucleus in true cases of embolism.

TWO CASES OF MONSTROSITY.

By D. Lloyd Roberts, M.D., M.R.C.P. Lond.,
SURGEON TO ST. MARY'S HOSPITAL, MANCHESTER.

Case 1.—Mrs. —, æt. 44, a delicate woman in an advanced stage of phthisis, of which disease she has since died, was confined in the early part of this year. She had borne, at the full period, several living children, free from any deformity.

Dr. Kennedy, to whose kindness I am indebted for the monstrosity, was called to her on account of a flooding, which, for some time, had been going on, more or less. He found the os uteri dilating under the influence of a pain and a placental presentation. He at once turned the child, and successfully terminated the labour. From the effects of the labour she recovered well, but died only a short time ago of the chest affection. During gestation she had been subjected neither to fright, nor seen a deformed person, nor had her thoughts been directed in any way towards deformity.

The child, a female, apparently in the seventh month of uterine existence, presented the following appearances. It was a foot long and acephalous. The whole of the scalp and the integument over the spinal column, as low down as the lumbar portion, were covered only by membrane, leaving the whole of the calvarium and the corresponding part of the

spinal canal entirely open, and unoccupied by cerebral structure.

In the cerebral portion of this membrane the falx major was very distinct. The laminæ and spinous processes of the cervical and dorsal vertebræ were absent. The absence of anything like a forehead gave to the eyes, which looked upwards, and were situated on the same plane as the upper surface of the head, unnatural prominency.

The abdominal parietes were wanting so as to expose the liver *in situ*, covered only by peritoneum. Several coils of

Fig. 7.

Case 1.—Front view.

small intestines were extruded. The child is depicted in the following woodcut.

Fig. 8.

Case 1.—Back view.

Case 2.—Mrs. —, æt. 40, the mother of several children, all of whom were born healthy, requested the attendance, in her confinement which took place October, 1868, of one of the midwifes of St. Mary's Hospital. Mrs. —, had an easy, natural labour. She states that during her pregnancy she was in the habit of seeing a child with a hare-lip. The sub-

ject of this paper, a male child, presented the following peculiarities :—

A double hare-lip with cleft palate on both sides, six fingers on each hand and six toes on each foot, an umbilical cord much distended at its abdominal attachment, apparently the result of umbilical hernia, and the frontal portion of the calvarium greatly compressed. This case is depicted in drawing No. 2.

Remarks.—Case 1 appears to belong to the second genus of the family of Anencephaliens, described by M. Isidore Geoffroy St. Hilaire, and thus defined, "Point d'encéphale ni de moelle épinière, crâne et canal rachidien largement ouverts."[1] The inferior limit of the fissure varies from the commencement of the lumbar region to as far as the sacrum, and even to the end of that bone. With regard to the usual appearance of the cranial and cervical fissure after the birth of a monster of this description, M. Isidore G. St. Hilaire writes (p. 355, vol. ii.) : "The common integuments not only do not cover the vertebræ affected with fissure, but even stop on each side at some distance from the lateral parts of these vertebræ. They, consequently, leave uncovered, behind the neck as well as on the cranium, a vast interval whose aspect, moreover, is far from being the same in all the subjects or, more correctly, at all ages. At first, and until the moment of birth, this interval is occupied by a voluminous pouch, filled with serosity, and formed by transparent membranes which, according to M. Vincent Portal, arise from the spinal meninges, and appear in effect to be only an expansion of these membranes, and especially of the arachnoid. This pouch is generally torn during labour, and there only remains of it, after the flowing away of the liquid which it contained, some very irregular shreds. It is in this condition that the anencephaliens generally present themselves to the observation ; they offer then, behind the neck, a large denuded surface, slightly concave, continuous with the base of the skull, and which is formed in the middle by the posterior face of the

[1] 'Histoire générale et particulière des anomalies de l'organisation chez l'homme et les animaux,' tome ii, p. 352.

bodies of the vertebræ; laterally, by the vertebral laminæ thrown on each side."

As St. Hilaire states (p. 368, vol. ii.) that eventration is one of the most frequent complications met with among this genus of monsters, it is not surprising that the present subject should have the abdominal parietes absent and the viscera of that cavity exposed. M. St. Hilaire further remarks that anencephalien monsters are exclusively or nearly exclusively produced among the human race; that they are four times more frequent than the other genus (derencephalien) of this family; that they are more often of the female sex, and that they are born most generally in the course of the eighth month.

Case 2 displays a complication of anomalies, not one of which is sufficient, however, to constitute it a true monster, according to M. St. Hilaire, but rather would cause it to be classed among the "Hemiteries" or "Simple Anomalies." The hernia at the umbilicus will place it in the group "exomphale congéniale" belonging to the first order (anomalies by displacement) of the fourth class of simple anomalies; the double hare-lip and cleft palate, in the fifth order (anomalies by disjunction) of the same class; and the six fingers and six toes, in the second order (anomalies by augmentation of number) of the fifth class of hemiteries.

Mr. Squire, alluding to his paper in vol. ix, said—

Since the communication on Puerperal Temperatures made last year to the Society, some exceptions have been found to that subsidence of temperature there shown as following upon parturition. This subsidence has been delayed by catarrh; in one instance it was prevented altogether by herpes labialis, developed on the third day; in a recent case where, from some nervous disturbance, the temperature before delivery became as low as 98° and further subsidence was unlikely, retention of urine caused a temporary elevation to 101°. Once only has a progressive increase occurred; this was clearly independent of any puerperal accident, and so

marked as to prove of great diagnostic value. A patient, in November, 1867, a little before the time expected for her fourth labour, complained of back-ache less intermittent than the usual premonitory pains, and not distinctly like labour-pains until the next evening, the pains were then not very forcible, there was marked lassitude in the intervals. Sleep followed delivery; but by morning, the feeling of illness continuing and the temperature having advanced to 102°, the presence of some intercurrent affection was recognised, and the balance of evidence being in favour of small-pox the infant was removed and vaccinated. Next day the eruption showed itself on the mother in the modified form; both ultimately recovered. The child had well-marked vaccinia. For three weeks there was considerable disturbance of the infant's health: throughout, this was closely followed by the thermometer. The facts then observed, to acquire their full value, required comparison with many others of a like kind bearing upon infantile health. The observations thus occasioned are collected in the first part of the following paper:—

INFANTILE TEMPERATURES IN HEALTH AND DISEASE.

By William Squire, L.R.C.P. London.

The temperature of the infant at birth is that of the mother, so that generally it will be about 99°. Taking the two extremes of temperature at birth, where the mother's temperature has exceeded 100° the child's has also; and once when the temperature of the mother was as low as 98° so was the child's. In these cases, as in several of the more ordinary instances, special means were taken to ascertain this correspondence by inserting a thermometer of small bulb and long index within the spincter ani of the child immediately after birth. This same thermometer has been made use of in all the subsequent observations.

The point of interest next to be noticed is the uniformity with which the infant acquires that particular degree of

temperature (98½° to 99°) which is to become the index of the health of the individual, literally from the cradle to the grave.

To take an ordinary instance: (Case 1) a boy born quite at the full period without undue difficulty at 1.30 p.m., the temperature taken in the rectum at 2 o'clock, was 98°·4, the child having been but slightly covered in a not very warm room; the surface generally was colder, but at 3 o'clock after the child had been washed and dressed, 98°·4 was easily obtainable in the folds of integument at the neck. At 8 p.m. the temperature taken at the neck was still 98°·4, and next morning the same, though the night had been passed sleeping in a bassinet, little or no food had been taken as the child seemed too well nourished to have much disposition to suck. At 11 a.m., after washing and dressing, the surface temperature in the neck was 98°·8. During the month the supply of breast milk had to be supplemented by the bottle, but the temperature was always found close upon 98°·4. The child was weaned in the second month, and after some variations the temperatures taken during a week were all nearly the same. Of two children born prematurely, both at the the period of eight months, the one, a boy, (Case 2) twelve hours after birth had a temperature of 98°·7, very nearly what it was at birth; the next day the rectal temperature was 99°, though only a little water and sugar of milk had been given; a wet-nurse was then obained, and after some irregularity at first, the temperature for several days continued between 98½° and 99°: the other, a girl, (Case 3) having the extreme of high temperature at birth, was considerably below the average on the second and third days after; on the fifth and sixth days there was a temperature of 98°, though the advantage of suitable nourishment was wanting. The extreme instance of low temperature at birth (Case 4) was a girl supposed to be beyond the full period and certainly of full size; the cord was in a tight knot, and some little time elapsed before respiration was perfectly established; six hours after birth the temperature *in recto* was still 98°, the surface had become warm and of good colour, nothing had been swallowed

and no urine passed; next day there was a rise of half a degree; after that, the supply of breast-milk being very free, 99° was always obtainable whether the child were close to the mother's side in a greater heat than seemed wholesome, or exposed in washing and dressing to a lower temperature, and for a much longer time than seemed prudent.

The diurnal variation of temperature, which becomes the rule of later life, is hardly to be observed in young infants; their sleep comes as readily in the day as in the night, and their food is often as easily within reach in the night as in the day. A somewhat higher temperature is found in the latter part of the day by the fourth or fifth month, but even then a great difference between the morning and evening temperature would indicate want of attention on the part of the nurse, or delicacy of constitution in the child, or both. A marked increase of temperature towards night has been established by Dr. Sidney Ringer as a sign of tuberculosis.

Food is the source of heat, and the equality of temperature in early infancy is mainly dependant upon fitness of food and frequency of feeding. Two hours, or if the infant has been sleeping three hours, may be requisite for a full meal to influence the temperature of a healthy child: thus of three observations taken in the second month, in Case 1, two were taken within an hour of the mid-day meal, giving 98° and 98°·2 in the neck, 98°·6 in the rectum; the third taken at 3 o'clock was 99°·1 in the neck, the child had been sleeping since its meal, which was a full one.

The immediate effect of a meal, or of warm liquid merely, in raising the temperature of the body, as pointed out by the late Mr. Stuart, has been too generally stated; it has rarely been noticeable here, probably because of the care taken to avoid giving infants their food too hot: once this was allowed with the following result. In the case just given (Case 1) the infant when three months old was restless and in some pain; the diet being equal parts of milk and water, some curd passed undigested; the child had been recently crying much, the temperature was 98°·2 in the rectum, and until the descent of some fæcal matter was only 98°. Four ounces of thin, sweet liquid at

a temperature of 101° was given in a tube bottle, the half of this was taken while the temperature was near 100°, and most of it while above 99°. In a quarter of an hour the rectum temperature reached 99°·4 during the passage of a considerable quantity of liquid fæces, in another quarter of an hour the temperature in the rectum was still 99°.[1]

When the child has suffered weakness or want, a direct increase in the bodily temperature follows the administration of food. Thus, in Case 2, before noon on the fourth day, the child neither having been washed that morning nor fed for some hours; the surface temperature was 97°, and that *in recto* only 97°·4; after suckling the temperature quickly rose to 98°: the next day it was 98°·4. Also, in Case 3, when the child, not being suckled for the first three weeks, had thrush and was in danger of death from inanition, the debility was too extreme when the child was put to the breast for an immediate effect to be produced by the new food; twice the temperature had been near 96°, once even down to 95°, and generally not much above 97°; during the first two days of breast-milk the temperature was only 97°, it became 98° both *in recto* and in the folds of the neck by the evening of the second day, when it was also as readily obtainable at the surface as the interior of the body; there were at the same time other signs of the return to health of the mucous membrane as well as the skin. On the third day the child was washed and dressed after three hours sleep; at 10 a.m., without being nursed, the temperature was 97°·8 on the surface, and less than 98° in the rectum; a full meal was then given, which caused an increase of a whole degree of temperature; before noon, the child sleeping, 98°·8 was easily obtainable in the folds of skin at the neck.

More frequently the influence of food or of warm liquid

[1] Adults frequently swallow hot liquids, especially tea, at a temperature over 130°. Infants are more judicious; it has been noticed that when, as not infrequently happens, their food has been offered at too high a temperature, they will play with the tube and take but little till the temperature falls. A thermometer placed in the bottle will be at 99°, or below, at the time the food is swallowed freely.

is seen in developing upon the surface of the body a temperature already existing within. Cold bathing has a marked effect in this way on the healthy child, and while no stimulant is so valuable as food, the influence of the bath in equalizing the temperature of the body ought not to be overlooked; the greatest effect in this way in raising the temperature of the surface is produced by the combined effect of both. Where the circulation is feeble, or there has been fatigue, or a chill, warm liquid and external warmth combine best in this object. The effect of food and the bath was noticed in a child of four months (Case 5). On October 1st, at 10 a.m., the temperature in the axilla before breakfast and the bath was only 97°·8, while in the rectum it was 99°·6; a little later in the day the axillary temperature was 98°·7, that of the rectum 99°·1: the bowels were confined. So that here not only is the general temperature restored to the surface, but it is equalized, for while that taken in the axilla is raised by nearly a whole degree, that in the rectum is lowered by exactly half a degree. The next day, October 2nd, before washing and feeding, the axillary temperature was 97° only, the rectal 98°·6; the bowels had become relaxed. On October 3rd, at 10 a.m., after washing and feeding, 98°·2 was easily obtained in the axilla. On October 4th, the evening was chosen for the same enquiry; before having food and being undressed for the night, the temperature was only 96° in the neck, 97° in the axilla, and 99° in the rectum; later in the evening 98° was obtainable in the neck while the child was asleep. A similar observation was made upon a strong, thriving girl, three months old, (Case 6) where the natural nourishment was supplemented by the bottle. At 5 p.m. the axillary temperature was 97°4, the rectal 99°·1; some little gastric irritation had been set up by the use of farinaceous food. Another observation was made in this case some days after all farinaceous food had been discontinued, when 98° was obtained in the axilla and 98°·3 in the rectum, but this was earlier in the afternoon, not long after a meal and just after a sleep.

Sleep aids powerfully in maintaining the equilibrium of

temperature, its effect is obvious in the above instances: when deficient in the day the temperature keeps up, and though its loss at night has been found associated with a low temperature, yet if long continued and profound, sleep indirectly tends to lower the heat of the body by its influence upon respiration: thus, Case 3, at two months' old, while wakeful, with a pulse of 150 and respiration 50 in the minute at 4 p.m., had a normal surface temperature and one of 99° *in recto;* a day or two after at noon, while in a deep sleep that had lasted two hours, the pulse was 120, the respiration 30 in the minute, and the temperature, below 98° in the neck, was only 98°4 in the rectum.

Respiration has the closest and most important relation to the heat of the body, of which it is the efficient cause; on the establishment of this function an independent temperature is commenced, which it continues to maintain and regulate. There is always a certain ratio between the respiration and circulation: at birth the regularity of the fœtal pulse, yielding to the influence of new stimuli, at first becomes greatly accelerated; during sleep it is again down to 120 and may subside to below the fœtal rate during the first two days; the pulse at this time is often as low as 100, but as nourishment becomes more abundant it increases in frequency, and will then frequently be found to be 140 or 150, and the respirations 50 to 60 in the minute.

The respiration varies even more than the pulse; within the first week it has been counted at 80 during one minute and at 40 in the next; shallow breathing may have to be supplemented by yawning, or some imperious want in the economy indicated by crying, an act of great physiological utility. Ordinary quiet respiration in infants has a peculiar rhythm, consisting of a series of fifteen or twenty short pants, with pauses at every quarter or half second, calling to mind the rhythmical contractions of the young jelly fish when separated from the narrow pedicle which held it to the parent polype: there is the same regular action of the newly acquired power and the same short pauses, as if at first fatigue necessitated rest.

Notwithstanding the readiness with which the breathing and pulse vary in infancy under the slightest exciting causes, they maintain a relation to each other which is special to the early period of infancy, and differs from the ordinary ratio of childhood and adult age; there is also either an innate or readily acquired habitual difference in the rate and ratio of these acts in different individuals. The class difference which demands attention is, first, that in early infancy the ratio of the pulse to the breathing is only *three to one*, it may be even less; and, second, when this is steadying down to the more mature ratio of *four to one*, any causes that quicken the rate also increase the ratio. The period to which these signs of infancy-proper may continue, varies; the first characteristic of the earlier months of infancy may alter at three or four months, or continue beyond the second year; this persistency of the infantile condition is generally associated with debility, and may be traceable from this cause for a year or two longer; the second characterises what is known as the period of dentition, but it has no special dependance upon the appearance of the teeth; it is connected with rapid development, when change is active the breathing is quickened that the temperature may be maintained.

The normal rate for the first few months of infancy is, pulse 120, respiration 40 in the minute. A child, five months old, (Case 7), while at the breast has a pulse of 104 and respiration 26 in the minute; soon after the pulse becomes 120 and the respiration 40 from some disturbing cause other than the teeth; when this is over, (three weeks from the first observation), the pulse was 100 and the respiration 25 at least during sleep.

It is not until the child is a year or year and a half old that the formula "pulse 100, respiration 24," which prevails from the second to the seventh year, is generally found, and then with the greatest variations; these depend less upon the state of dentition than upon individual peculiarities, as will be seen: a child of a year old (Case 8) with a pulse of 120 and respiration 30, has this rate somewhat diminished (it was reduced to 88 and 20 on one day from diarrhœa) in the next

month while cutting two double teeth; another child (Case 9) of a year and a quarter, with only three incisor teeth, has also pulse 120, respiration 30; of two children, each fourteen months old, both of rapid growth, the one (Case 10) forward, the other (Case 11) backward with the teeth, each had the pulse 120, and respiration 40; one of these, a boy (Case 10) at a year and a quarter, when all but the last four molar teeth were through, has pulse 100, respiration 24; another boy (Case 12) of two and half years, backward with his teeth, has exactly the same, while a third, (Case 13), two years and eight months old, with all his teeth, but in a low state of nutrition, has a pulse of 120 and respiration of 30. The third and Cases 8 and 11 had a somewhat low temperature; Cases 9 and 10 had high temperatures, which in the first was sometimes and in the last frequently 99°: at a year and a half this child has measles, after which the temperature is low, and the pulse-respiration ratio again becomes 120 and 30 in the minute and continues so for some weeks.

High temperature and quick respiration are associated with rapid growth. Case 10, at fourteen months, was 33 inches in height; Case 12, up to two years old had the respiration generally 30 in the minute, he had then grown 2½ inches in less than six months. In this child the respiration while 24 in the day was still 22 during sleep. Other children, two years old, with a respiration of 22 in the day have had it 18 in the night; it has been found as low as 15 at midnight in a boy of seven years old.

The individual differences which in after life may become permanent are less confirmed in infancy if not altogether accidental, thus the infant (Case 5) with a pulse as low as 100 when three days old, had also at three weeks old a pulse of only 110 and a respiration of 30, yet at three months, the temperature being both times 99° interiorly, the pulse is 130 and the respiration 40, the difference being from some addition made to the food, which was not over abundant while the child was suckled exclusively; the infant (Case 4) with a superabundance of breast-milk had a pulse of 140 and respiration of 50, the temperature containing from 98°6′ to

99°. Only in some of the cases when a frequency of the pulse and respiration has continued through the second year has the infantile rate been also quick. In other cases this quickness has existed during a few months only, and these times of rapid growth, of which it is indeed a concomitant; and though, as before mentioned, often associated with other conditions, is of itself no indication of pulmonary disorder.

The nervous system probably exercises an influence underlying all the varying conditions, harmonising all the stimuli both from within and without the individual, and tending, as long as its function is unimpared, to preserve an equability of temperature amid ever changing circumstances. The pulse may vary with the slightest exciting causes, and the respiration with the different states of weakness or want in the body, but the temperature remains the same: the great object seems to be that the elements out of which the phenomena of life are being evolved should be maintained in one constant physical state, of which an even temperature is an important condition. Hence it is that the variations in the bodily temperature become so valuable an indication of disease, in the adult more certain than the variations of the pulse; but in infancy, when the pulse and respiration taken together are even less trustworthy, it is satisfactory to find one condition of the body remaining so far constant, varying only within certain limits, and with certain ascertainable changes in the system, as to be a guide both in our estimate of health and in our diagnosis of disease.

The extremes of temperature coexist with lesions of the nervous system. Concussion of the brain and shock are associated with exceptionally low temperature. Dr. Hermann Weber[1] has recently shown the connection of certain diseases of the brain with great elevation of temperature, and adduces a case from Sir Benjamin Brodie where this was occasioned by injury to the medulla oblongata. I am indebted to Dr. J. Russell Reynolds for an instance in which, from an injury of the lower part of the spinal cord and complete paraplegia, the temperature of the paralysed parts

[1] 'Transactions of the Clinical Society,' vol. i, p. 21.

was considerably above that of the rest of the body. Under my observation exceptionally low temperature occurred in a case of puerperal convulsions, and exceptionally high temperature in a condition bordering upon puerperal mania.[1] So in infants there are certain convulsive disorders with diminution of temperature as their diagnostic mark—laryngismus stridulus for example. There are others which happen only with great elevations of temperature, such as those which mark the ingress and culmination of some of the exanthemata, where the occurrence of convulsions in infancy shews a certain parallel to, if it does not replace the delirium of older persons and children.

The close relation of nervous phenomena to temperature has an extended significance. Where the nervous centres are themselves the seat of disease it is to be apprehended that a fallacy may arise in the temperature variations ordinarily met with. From two or three that have come under my notice, it seems questionable whether pressure from tubercle or other causes may not, at a certain point, either prevent the temperature variation proper to tuberculosis, or interfere with the rise of temperature that would otherwise be occasioned. One of these cases, an adult, characterised by a low temperature throughout, had cancerous tumour of the cerebrum.

The case of paraplegia mentioned above is one of the few in which part of the body has its temperature raised without a corresponding elevation in the general temperature; lesion of the sympathetic arresting its power to cause contraction of the blood-vessels was doubtless concerned in the high temperature of the lower extremities in this case, where there was also rapid ulceration of the integument. Exhaustion of the nervous supply of a part affected with inflammation or suppuration of long standing may be the cause of the temperature often being found to be considerably greater there than in the corresponding part of the body, and sometimes probably in excess of that of the interior.

[1] Obstetrical Society's 'Transactions,' vol. ix, p. 129, convulsions preceded delivery in Case 12. In Case 11, besides insomnolency, there were periods of temporary excitement with delusions.

The greatest difference between a local and general temperature met with in infancy has not exceeded half a degree, and this under exceptional circumstances. The infant mentioned at the commencement, on the tenth day after vaccination had secondary pustules on the arm, which kept up much irritation and discharge, the general temperature, fluctuating at this time from a little below 98° to nearly 99°, was easily depressed by exposure or raised by food; during five days, while the arm was still red and secreting a good deal of thin matter, the temperature in the axilla of the arm affected was higher than that of the rectum, when this was 97°8 that was 98°3; and after food, while it was 98°8 in the axilla it was 98°3 in the rectum; the descent of the fæces reduced, but did not obviate this discrepancy.

There is a lowering of temperature after all the acute febrile diseases, and a liability of it to be easily depressed during convalescence; this has been pointed out by Dr. Ringer[1] and is owing to the interference with nutrition, as well as the waste of tissue thus occasioned: only those who follow temperature variations carefully can be sufficiently impressed with this truth; it obtains in the slighter ailments of children as well as in the more severe. It is well marked after vaccination, and even after a day or two of infantile diarrhœa. In one such case, occasioned by excess or error in feeding, and not treated by medicine, though the temperature *in recto* never exceeded 99°, there was a lower range of temperature than usual for five days after, with only 98° *in recto* on one of them.

A depression of temperature in infancy is of more immediate practical significance than the slighter elevations, for while it excludes the idea of any acute or special disease existing, it points at once to the condition requiring remedy, namely bad nutrition. This may occur while the infant is being suckled if the milk be deficient in nutritious quality, as well as in Case 3, when from absence of breast-milk the temperature, once as low as 95°, was kept down to 97°. Even in older children when suckled for too long a period,

[1] Reynolds' 'System of Medicine,' vol. i, p. 416.

or when oatmeal or slops, on the Scotch and French plans, are substituted for milk and bread and butter, the same thing happens: a girl, aged one year and eight months, brought up on the latter plan, has eczema of head with extensive suppuration of the lymphatic glands of the neck; the temperature nowhere was above 97°. This child had twelve teeth, and some little trouble from them.

The irritation of teething may have some positive effect in diminishing temperature; this has been found to be low even when there was restlessness at night with a feeling of heat on the head and skin. Flatulence in young infants is a frequent cause of disturbed rest and low temperature. Spasmodic affections, tooth-rash, bronchial rales and diarrhœa, if from tooth irritation and defective nutrition combined, are found associated with a low degree of temperature. During dentition croupy attacks, closely resembling true croup in all external characters, may be at once distinguished and relieved.

In cases of so-called "irritation from teething" when the temperature is much elevated, and this may happen in those suffering from the most defective nutrition, some other cause than mere tooth irritation must be looked for; in this way constipation, catarrh, either of pulmonary or gastric mucous membrane, enlarged cervical glands, slight enlargement of the glandulæ concatenatæ, or even otitis may be found; and in these states of system, with great mobility of nervous system, a very high temperature is quickly reached, 100° to 101° (Case 14) is frequently met with, 102·3° (Case 14) has occurred, and even 103°; though this quickly subside, and the complication present call for no grave prognosis, it is to be borne in mind that the high temperature if not enough to cause convulsions, may through exposure or want of care readily lead to some serious complication; indeed, such elevation of temperature as significantly points to the necessity for rest in bed, as does the opposite condition to the improvement of the diet.

In infantile diarrhœa, the temperature taken in the rectum is a valuable aid both to diagnosis and treatment. A child,

(Case 16) fourteen months old, with sudden diarrhœa and thirst, cutting the lower molars, pulse 100, respiration 20, has a rectal temperature of only 98°. In Case 8, though the skin felt hot, and the anus was excoriated from the diarrhœa, the temperature in recto was 98°·6 ; a little girl, ten months old (Case 17) cutting the lower incisors, has diarrhœa in the morning and cough at night, pulse 140, respiration 40, has the temperature in recto 98°·3. A child, six months old, (Case 18) from improper feeding, has severe diarrhœa for three or four days, the rectal temperature continues at 99°, once only being 99°·3. Contrasting strongly with these is Case 19, occurring at the same time as the last, in the summer, the child four months old has diarrhœa, not so severe apparently at first, but the rectal temperature was 102°·5, and all the characters of choleraic diarrhœa eventually declared themselves ; on the fifth and sixth days the temperature was only 104° in the rectum, though the surface was with difficulty kept warm ; on the eighth day the rectal temperature was 103°, after which a gradual diminution occurred, and the child died on the fourteenth day. In the numerous cases of serous or choleraic diarrhœa among children occurring last July and August, this way of noting the temperature was also of use in estimating the gravity of the seizures, and sometimes in prognosticating recovery. A very delicate infant, a fortnight old, with an attack of this kind, had a temperature of 101°, and for three days it was 100°·5 or more ; on the fourth day there was a diminution to 99°·2, and on the fifth, though the child seemed as ill as possible, and the returning urinary secretion was much mixed with blood, the temperature being 98°·6 on that day, and 98°·4 on the next, gave hopes of recovery, which the result justified.

The high temperature characterising the acute specific diseases is as marked in cholera and diphtheria as in measles and scarlet fever, and in doubtful cases often becomes a trustworthy agent of diagnosis. In the anomalous cases of scarlet fever likely to arise in an epidemic as widely diffused as the present, some of the doubtful cases might be recog-

nised by the thermometer, which otherwise would be in danger of being overlooked; and it is hardly too much to say that in this way fatal consequences have been arrested.

A child one year and a quarter old (Case 20) had been restless for two nights, and had an evanescent eruption supposed to be tooth-rash; the child was running about the room, pale, with no trace of rash, and apparently cheerful and cool; the temperature was 102° on the surface, and in the evening became 103°, the rectal temperature was 104°. Warmth and rest enabled the rash to reappear; there was slight throat affection at first, which afterwards became troublesome, and the illness was not over for two months.

In diphtheria, valuable time is often lost from the first few days of high temperature being overlooked. In scarlet fever the high temperature is so quickly followed by the rash, that the necessary care can at once be taken. In both the period of illness, as measured by temperature, is somewhat longer than has been stated; in mild cases pyrexia only lasts five days, in some, the temperature begins to subside on the surface before the rash disappears, and frequently becomes considerably less when that has faded, yet it may continue to be as high, or higher, in the rectum for a day or two longer, and may not subside till the tenth or twelfth day, after which the existence of certain complication will send it up again. An important point can here be decided by temperature. If no kidney disease have been set up, or be now existent, albuminuria may continue in considerable quantity (apparently from the blood-state alone), without increase of temperature, whereas, the appearance of albuminuria has been marked by a considerable increase of temperature where there has been reason to suspect lesion of the kidney. In one instance (Case 24), casts of renal tubes were found in the urine when there was no albumen.

The period of incubation for scarlet fever is probably five days; it may be less: the longest period to my knowledge is eight days, in the case which follows. No marked temperature change has yet been detected until the day preceding the rash; there may have been a day or two

of heaviness noticed, with perhaps yawning, and even a period of low temperature; just before the more declared symptoms there is excitability or liveliness sometimes with a return of appetite, and it is often remarked how particularly well the child seems; this, of frequent occurrence before the illnesses of children, marks the commencement of the elevation of temperature. A boy (Case 21), æt. 2½ years, removed from an infected house for a week's quarantine would, on the eighth morning, have been pronounced unusually well, except that the axillary temperature, hitherto somewhat below, was found to be slightly above the normal; the bowels had not acted with the usual regularity, by night there was a high temperature, and before morning vomiting and diarrhœa, with tenesmus. The rash was fully out by noon, and that evening and next day the temperature of the surface was 101°, with a very full rash. On the fifth day, though still very red, the skin temperature at noon was only 98°, but in the rectum it was still 101°, and at night 102°. This temperature, with the same evening exacerbation, continued till the eighth day: the subsidence was nearly complete on the twelfth day, when there remained only coryza. In a boy, seven years old, (Case 22), the highest axillary temperature was 102°·5 in the evening of the third day; next morning it was only 99, but rose to 101° by four o'clock in the afternoon, the temperature in the rectum continuing to be nearly 102°. On the fifth and sixth days the morning temperature of the surface was just below 99°, that of the rectum over 100, and in the evening 101°.

An evening exacerbation was found throughout the course of scarlet fever. In the case just given, on the eighth day a slight articular affection made the morning temperature 101° and the evening 102°·8; next day these were 101°·2 and 103° respectively. The morning temperature became 99°, and the evening 101°·4 the twelfth day; on the next, these were 99° and 100°·3; on the fifteenth, 99° and 99°·7; it was not till the sixteenth day that a temperature of 98° in the morning, and 98°·5 in the evening, corresponded with an apparent freedom from illness. Sponging the surface during

the very height of the rash in scarlet fever has not only proved a comfortable but a perfectly safe proceeding; at this time its effect in raising the surface temperature and in moderating that of the interior, is at least as great as in health. In a child (Case 23) who had been delicate, the axillary temperature on the second day of the rash of scarlet fever was only 99°·1—it had been 100° the evening before—the rectal temperature was 102°; the surface was sponged at eleven a.m., and before noon 101° was obtained in the axilla; the evening exacerbation was moderated by the same means. The rash continued to be quite as red, but gave less discomfort. Where the difference between the surface temperature and that of the anterior is great, this method might be more frequently adopted; where both are unduly elevated, and not controlled by full doses of quinine, resort might be had to the old remedy of cold affusion.

Scarlet fever, if not always as severe in infancy, may be thoroughly characterised at an early age. A girl (Case 24), æt. 1¼ years, had a full and vivid rash during the first week of illness, slight affection of the ear-passages in the second, and some desquamation of the renal epithelium, as well as of the skin, in the third. The disease, in a severe form, proved fatal to an infant whose sister, æt. 4 years, recovered with the loss of the cervical glands by sloughing; this accident also eventually proved fatal to a delicate girl of five years who suffered convulsions with the first appearance of the rash.

The highest temperature noted during scarlet fever has been 104°·5, in a boy, æt. 9½ years, on the third and fourth days of the illness; this may have been exceeded during the intervening night, but the next night, when there was active delirium, 104° could not be obtained on the surface. The temperature was 103° in this case till the eighth day, 102° on the ninth and tenth, and in two days more became normal.[1]

[1] During the passage of these sheets through the press scarlatina has been met with, preceded by thrush, in an infant (Case 31) not quite four weeks old; the temperature at the height of the rash reached 102°; it was

In measles a temperature of 104° has been met with just before the height of the rash (Case 25) in a boy of seven years old, with slight delirium, but no other bad symptom. A boy of nine has much nocturnal delirium, with a temperature of 104°·1 in the axilla; this was on the fifth day of illness, and at the height of the rash; the next day there was diarrhœa and a temperature of 101°. Another boy, æt. 12, the third day of illness has a temperature of 104°·6 on the first appearance of the rash; there was diarrhœa, but very slight delirium; a full rash with subsidence of temperature, and favorable progress with great depression of temperature after the sixth day. A boy of five (Case 26) has 103°·5 on the third day, before the rash is fully out; on the fourth, with a full rash, the temperature is 102°·4, quite a degree less than the day before the eruption was complete; the pulse also subsided from 140 to 120, the respirations 30 on both days, increased to 36 in the minute on the next day, when the temperature continued to be as high as 102°; on the sixth day the temperature falls while the rash is at its fullest; and while still quite red on the seventh day, the temperature is only 98°, the convalescence being rapid and uninterrupted. In the elder boy (Case 25) some râles were heard at the base of the lung on the eighth day during the depression of temperature; these disappeared under the use of stimulants, and recovery was equally rapid.

Convulsions occurring before the appearance of the rash, proved fatal to a weakly boy six and a half years old. He is ill, and complains of his throat; on the second day the temperature is 104°·5, the convulsions begin towards night; next day death comes before there are any signs of the eruption. A sister, older, and two brothers, younger, go through measles favorably in the same house at the same time; six months after they are all carried off by diphtheria.

Convulsions occurred on the appearance of the rash, with recovery, in a stout boy one year and eight months old (Case 10) when convalescent from hooping cough, and troubled with

subsiding on the fourth day before the rash had quite disappeared; a slight increase marked an affection of the ears; recovery perfect.

the last four molars at the gum. Measles having broken out in the family, this child was removed from the house, carefully isolated, and watched. Ten days afterwards a slight elevation of temperature (99° in the axilla) was noted at night, by morning this was 100°, the cervical glands were perceptibly enlarged, the child was sickening and was restless at night; this would have been called the first day of the illness. On the next day, the second, there are spots of rash behind the ears and on the shoulders, the temperature is 102°·6. On the third day, at eight a.m., the rash is full upon the face, at noon the body and legs are covered; once during this day the temperature reached 104°, the exact time of this observation not being recorded. Convulsions occur at two p.m., afterwards the rash is paler; next day the temperature is only 99°, but the day after it is again 102°; and though the disease may have been interrupted at its height by the convulsions, this increase of temperature was aided by some amount of pulmonary congestion, which continued through the following day. Convalescence was satisfactory with a low temperature, which was 98° on the ninth day, and afterwards still lower, the pulse and respiration being accelerated and reverting to the infantile type for some weeks (*vide* page 281).

Measles possibly becomes contagious before the characteristic lesion of the skin is established. The skin instead of being as in scarlet fever among the earliest tissues to be affected, shows signs of the disease after the implication of the conjunctival, the pharyngeal, and schneiderian membrane, and not always before that of the larynx and bronchi. A little girl (Case 27) six years old, the sister of the infant last mentioned, who was removed at the same time (November 5) has coryza a day or two without attracting much notice, and has more marked symptoms of measles one day earlier (November 14th), when she is sick in the morning and delirious at night; the spots appearing but faintly on the 15th. The temperature is 103°, the rash abundant. On the 16th, temperature 102°, the rash quite as full; 17th, temperature 99°·2, the appetite returning; the pulse 104. It was 140 on the 15th; respi-

ration at the same time has advanced from 30 to 34 in the minute; there are some bronchial râles, the breathing continuing to be slightly accelerated, and the temperature a little above the usual for a day or two longer. Had the first symptoms been attended to, and the child sent to bed a day or two earlier, it is fair to expect that the ailment would have passed off more easily. Her elder brothers, who had measles, were much with her before the separation, which was effected on the day that they first showed the eruption; whether she caught it from them before the appearance of the rash or no, it is clear that the elder brothers caught the complaint from a boy who had not then the completely developed disease. The two brothers (Cases 25, 26) attended a day-school where this boy resided. He was dull, and kept in the class-room with them on Thursday, October 22nd; they were absent from school the two following days, and on their return, Monday, October 26th, were at once sent home because this boy was in bed with measles. On October 31st the eldest brother is seized with vomiting, but is better next day, when both boys take a long walk and seemed tired. On November 2nd the younger has fever and restlessness in the night, and some spots appeared on the face which were not visible next day, November 30th; the temperature also subsided to 98°·4 in the axilla, but the pulse remained accelerated; both have the rash out on November 5th, and it is at its height on the 7th—the thermometric crisis occurring a day earlier in the elder boy. This is twelve days from the visit to the school, and as they were in the same class-room it is probable that they contracted the disease from him a day or two before.

Another case of this kind occurred at an excellent day-school under my observation. On March 2nd, 1868, a boy seemed dull at his lessons, and was kept in the class-room throughout the day instead of going home to his dinner as usual; the next day he stayed at home, and on the 4th was known to have measles. Many of the younger boys, from eight to ten years of age, who used this class-room, were either away ill or noticeably ailing on March 12th; one boy who only seemed dull at his lessons on that day had the rash

appearing on the 14th, and on the 16th it was at the height.

When exposure to the source of infection is more continuous a shorter time suffices for the development of the disease, and the period of incubation is then closely approximated to that necessary for the evolution of the rash after inoculation. Exactly this period (seven days) elapsed in one case, where a delicate girl (Case 28) was brought into its midst. This was on January 24th, 1865; on the 26th, there was headache, a slight elevation of temperature, no alteration of pulse; 27th, pulse quickened, elevation of temperature not so marked, conjunctivæ reddened; to keep in bed; 28th, throat red, small spots on temples, does not feel ill; 29th, the spots are slightly raised, not more numerous and not red, restless at night, and temperature higher; 30th, appearance of rash on the face and neck; 31st, rash characteristic, face swollen, chest and body generally spotted, arms and legs as much clear skin as coloured. February 1st, still red, temperature normal, no after consequences. The favorable progress of this case was probably owing to rest in bed during the early stages. Could the signs of ingress always be noted, some of the uncertainty in the appearance of the rash from the first to the sixth day of illness, and as to whether the disease declines on the fourth or seventh day, now found in the best accounts of the disease, would be removed. Moreover, the want of an earlier recognition is the great cause of the spread of the disease. In measles the ailment is frequently well nigh over before it comes under observation. Nearly a fortnight may elapse from the time of exposure to the fully-developed rash. The first temperature change may not be noticeable till five or six days after exposure to infection; then there remain seven days of illness, only five of which are markedly pyrexial. The thermometric crisis occurs just as the rash is at its height. Complication may delay the crisis and keep up the temperature for a few days; the sequelæ are associated with the subsequent low temperature.

Small-pox, by inoculation is developed on the eighth day; taken by infection it does not appear on the skin till the

fourteenth, after two or more days of sharp illness. In one case of a young girl elevation of temperature was noted four days beforehand, this reached 105°·2 the evening before the rash was thrown out. The illness proved fatal.

Vaccination, after a temporary depression of temperature a continuous rise commences on the fourth and fifth days; this suddenly increases on the eighth day, and as suddenly falls. Afterwards the local process may continue active, but the disease is over. There is, too, a tendency to a low temperature afterwards, and this actually accompanies any subsequent eruption, such as the vaccineous roseola.

Varicella once only has been known to begin with convulsions, and this in a weakly boy four years old; the convulsions occurred on the day preceding the eruption, there were no other bad symptoms. The pyrexia often attains a considerable elevation in this disease before the eruption is completed. A healthy, strong lad, twelve years of age, after two or three days' feeling of illness is found with a temperature of 102°, which increases at night and is attended with delirium; the next day some spots of varicella appear, on the third day they are numerous on the back and belly; the temperature in the axilla was at or near 99° from this to the eighth or ninth day, the spots continuing to be red; some of them dried up on the seventh day, when there was slight conjunctivitis. On the tenth day the spots had disappeared, the usual depression of temperature followed; on the eleventh day only 95° could be obtained in the axilla, the thermometer kept under the tongue with closed lips for two minutes only reached 97°·5. In a case of doubtful diagnosis in a weakly young woman the persistence of a temperature of 99½° at the end of the third week seemed to point to variola rather than varicella, though the case on either supposition must have been anomalous.

Mumps comes on with a marked elevation of temperature; it has been found as high as 103° in a child (Case 29) 1¼ year old, just before the greatest swelling of the parotid; there is often a subsidence of temperature by the time the child comes under observation or shortly after, the swelling continuing after the fever (sometimes very slight) is passed: so

that sometimes a boy will complain, with reason, that this is worse than other of his infantile disorders in that he feels hungry but cannot eat. The period of incubation is a long one, probably a fortnight.

Hooping-cough presents more difficulties in tracing thermometrically: its period of incubation may be nearly seven days. A girl, æt. 12, returns home July 25th, while her five younger sisters all have hooping-cough. On August 2nd she has large bronchial rhonchus and the hoop. The diagnosis of hooping-cough in its early stage from influenza or bronchitis in children must be always difficult. There is the same elevation of temperature, and the only point of differentiation to be offered provisionally, is the undue excitement and quickening of the pulse in proportion to the respiration; this point, common to all diseases of the class, may be noticed before, or sometimes with the first cough, often long before the first hoop, and at the same time a rise of almost a degree of temperature may be noticed.[1] Purpura and some other dyscrasiæ quicken the pulse, but do not elevate the temperature. Bronchitis, which elevates the temperature unduly, accelerates the respiration. Hooping-cough is also attended with a quickened respiration after the first day or two of illness; when the disease is fully established any rise of temperature then occurring must be referable to pulmonary complication, in every case where this has been noted it was owing, and in proportion to, the lesion of lung present; there may be serious impediment to respiration, as in the apneumatosis so well inquired into by Dr. Graily Hewitt, without at first producing a corresponding temperature change. When there is much impediment to respiration convulsions are imminent, and it is not too much to say that convulsions so frequently fatal in hooping-cough are always owing to the pulmonary implication. There may at the time be a greater elevation of temperature than the state of the

[1] In these diseases, at this stage, the use of sulphurous acid spray on Dr. Dewar's plan is to be recommended. Next to the power of a more early recognition of infectious diseases, some means of arresting them in their earliest stage is necessary to their extirpation.

lung generally produces, but for the relief of the condition it is the respiration and not the nervous system that is first to receive attention.

A child (Case 30) eleven months old, eight or ten days with hooping-cough, is suddenly febrile, with increase of cough at night and short breath; next day convulsions occur, a leech-bite on the temple had been bleeding some hours when the child came under observation; there was great pallor, and the fontanelle was depressed. Pneumonia, not far advanced, existed in the left lung. Before giving an enema of weak extract of meat and brandy, the temperature in the rectum was found to be 103°·6; next day the temperature in recto was 104°, the day after 103°, after which the pneumonia disappeared; the chest-walls were not collapsed; and now, though the respiration was relieved, the convulsions would sometimes continue for more than an hour. It was noticed that a convulsion took the place of a hoop, and was kept up by spasm of the glottis. The child was then held face downwards over a basin, cold water poured on to the nape and vertex, air was soon drawn into the chest, mucus expelled from the mouth, the attack thus cut short, and the child made a good recovery.

A parallel is again here noticeable between the convulsions produced by this condition in the infant and the delirium so constantly met with in the adult, where there is either sudden congestion of the lung or pneumonia. The great loss of blood in this case did not affect the pneumonia, though in its early stage; and what is still more worthy of note is that it did not in any way tend to reduce the pathognomonic temperature; indeed, this was somewhat higher than usual, though at the same time the system seemed nearly exsanguine.

There is one form of catarrh essentially infectious, which comes on with an elevation of temperature; this often amounting in young children to 100°. Before any complication, except slight enlargement of the cervical glands, can be detected; this has been found associated with influenza, and herpetic sore throat in different members of the same family,

and is difficult to distinguish at first from the onset of the exanthemata or of hooping-cough.

The spasmodic cough, occurring at night in children of low nutrition, or suffering from teeth, is readily distinguishable by the low temperature from the ingress of hooping-cough; a point of some importance among young children.

Thrush, or muguet, has been found associated with either extreme of temperature; in the one condition (Case 3) pointing to the want of suitable nutrition, with a good prospect of recovery, which would be less hopeful were the temperature to rise; in the other the prospect of recovery varies with the nature of the illness and the condition of the patient. At the commencement of a malady (Case 31) its presence need not prejudice the prognosis, and points then, as in cases where but little temperature change is met with, to the removing such articles of diet as the child cannot digest, and to the neutralizing the acid state of the mouth existing, when the vegetation and increase of the *Oidium albicans*, of which the white spots consist, is impossible.

Bronchitis may cause an elevation of temperature to 100°, and reduce the pulse ratio below three to one. In children over two years of age the pulse and respiration ratio may, as in adults, be a guide to pulmonary congestion or pneumonia, of which latter state the ratio of two to one is no doubt pathognomonic; but in infants, little more than the extreme disturbance of this relation can be made out. Besides the physical signs of these disorders, we have for our guidance the greater elevation of temperature, which, if a small part of the lung tissue be implicated, will often rise to 103°, or higher. As high a degree of temperature may exist for a day or two in idiopathic croup. In croupal diphtheria the temperature may or may not be so high, but it continues near 100° for a much longer period, possibly to the tenth or twelfth day, even in extreme conditions of apnœa.

In taking these observations, it is necessary that the thermometer should have a small bulb, and that it should be completely covered by and in contact with the surface where it is applied. Except in very young infants the axilla is the most

convenient place, and the thermometer is best introduced from behind; on raising the arm two axillary folds are seen, the thoracic one should receive the bulb of the instrument, and the arm be then turned and held down for two or three minutes; in this way a temperature may often be obtained within half a degree of that of the interior of the body. In the folds of skin around the neck of a well-nourished infant a similar result may be obtained; indeed, a fold of skin sufficient to cover the bulb of the thermometer at any part of the surface which has not been unduly exposed, will afford useful indications,—even the readiness with which the temperature is obtained may be of some diagnostic value.

In conclusion, it is hoped that these observations may be found to have a practical relation to the health of infants, and that this method of observing may prove a definite aid to our means of investigating their diseases.

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